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[J. B. B. Wellington

GEORGE WALTON AGED ABOUT 60
(See the leading article in this "Journal")

JOURNAL OF THE
ROYAL INSTITUTE *of* BRITISH ARCHITECTS

VOL. 46 3RD SERIES 3 APRIL 1939 No. 11

Journal

Evacuation—Holiday Camps

The Housing Centre Camps Exhibition is a first-class show of more than passing interest. Many exhibitions are admirable displays or instruments of propaganda, but nothing much more. Once interest has been excited, exhibitions of that kind can be forgotten. It is not so with this exhibition. The interest in camps and the urgent demand for them exists now; the Housing Centre has canalised the interest, demonstrated the urgency, analysed the problem into all its factors and presented a large number of solutions prepared by architects who have carefully studied the design of camps in the preparation of some actual or ideal scheme. The Exhibition indulges in no dramatic feats of display; its very limited accommodation is taxed to the utmost, the screens are simply arranged on the walls and the information on them is presented in manners that differ according to the authors' tastes, but the exhibition gets home. It can be said to start at the point where the trumpet blowing ends. The architect who can go and fails to do so will perhaps just show himself to be a dull fellow for failing to take advantage of the carefully prepared research of a large number of experts whose brains can here be picked at the enjoyable expense only of an hour's careful attention.

The first room states the dual case for the camps; to raise the standard of physical fitness by providing city children with country schools and city dwellers with holiday places to which they can afford to go, and secondly to provide properly planned refuges in time of war. Examples from other countries—Canada, U.S.A., Denmark, Sweden, and the U.S.S.R.—are shown in this room. In the lecture room upstairs various technical matters are worked out theoretically, the most interesting exhibit being a series of screens which includes an analysis of layout and the various possible structural methods. The remainder of the exhibition consists of schemes, some ideal, many for actual sites and planned with a view to their immediate erection. The quality of most of these schemes and the technical and æsthetic imagination shown is an impressive reminder, which we hope Sir John Anderson noticed, of the ability waiting in the architectural profession to be used by him.

Sir John Anderson, when he opened the exhibition on 29 March, claimed, not quite fairly, that it was organised as a result of the Government's announcement of their Bill to provide camps. Actually the exhibition was already being organised several weeks before the Government plan was announced. Sir John, who confessed himself a recent convert to camps, quoted the Book of Genesis to show that the subject was quite respectable, and defended the fact that the Government scheme proposes to provide accommodation for less than 1 per cent. of the population to be evacuated in war time by saying that the whole affair was so important that if we did anything quickly we might easily regret the results. It was wisdom to go slowly. Well . . . if the need is as urgent as the polemical part of this exhibition makes it out to be, and, if the technical resources and the achieved research of the experts are as great as the technical part of the exhibition shows them to be, there is both cause for swift action and hope that if the technicians are given a chance they will successfully provide England with camps, efficient, sufficient and lovely.

Professor Richardson on Railway Stations

The next and the last paper to be read to the Institute this session will be Professor A. E. Richardson's on "Railway Stations," on 24 April. After a Roads Exhibition it is perhaps seemly that the railways should get a square deal in the R.I.B.A. from a person who can be guaranteed to make the most of a subject brim full of interest of every kind, historical and contemporary, architectural and sociological, technical and artistic. The railways provided the means by which the Industrial Revolution splashed its dirt and tawdriness over the whole of England, and did it under the best auspices of highly patronised "development." "Wherever the iron rails went, the mine and its debris went with them . . . the locomotives brought noise, smoke, grit into the hearts of the towns." The railways destroyed the towns and now the roads destroy the countryside.

And yet there is a credit side; if we can retain our detachment to see railways as an historical index, much of the good as well as the bad of Victorian architecture and social life is seen to be clustered round the railway nucleus. If they messed up the towns they gave the townspeople a means of escape. If the new stations have proved to be the focal points of slum they have often enough been grand buildings by the biggest and

best architects, who have wrestled earnestly if not always successfully with the awkward problem of fitting an old architecture round a new social problem. Hidden in the history of railway architecture is a large part of the complicated mystery of the breach between architect and engineer, Telford to Tite, the Britannia Tubular Bridge to Charing Cross, St. Pancras front and back.

Scheduling Cottages for Preservation

There was a shocking omission in the note in the last JOURNAL on the preservation of cottages of artistic or historic value, because among all the pious expressions of hope there was no mention of the one positive, practical step that has been taken so far : the survey which was organised by a sub-committee of the R.I.B.A. Town Planning, Housing and Slum Clearance Committee in June 1938, and is now being carried out under the control of the Institute's Allied Societies in conjunction with the C.P.R.E., local branches and rural community councils. This survey is doing exactly what the note said was desirable ; has been doing it, in fact, for almost a year. All cottages of sufficient merit to justify repair and preservation are being photographed and details of their construction and particular merits recorded on forms which will eventually be deposited at the headquarters of the local Allied Society, the appropriate local authority and also with the Ministry of Health. It is naturally a task of considerable complexity to organise a survey such as this with practically no money and only voluntary part-time labour, but the committee have had quite remarkable success. The work is not yet completed and the help of more people is always wanted ; actually only one-third of the Allied Societies is co-operating when every society should be interested, if only to increase its local prestige. The Kent and Somerset surveys have been completed, which means that, allowing for some natural omissions, every cottage worth preserving and capable of being re-conditioned in those areas is recorded and known to the local architects and authorities. Members who want to help are asked to write to the Secretary of the Town Planning Committee at the R.I.B.A.

The Annual Report

The next number of the JOURNAL, published on 24 April, will be the Annual Report Number, the index to the R.I.B.A.'s work. Annual reports never can be large enough to include fully descriptive notes on every part of R.I.B.A. life and work ; quite often hard-worked committee men must feel that several pages rather than a few paragraphs are needed to do justice to their work, and others, vigilant critics of the Institute, must want longer and more revealing reports to enable them to judge the quality of the year's work. But even if the annual report is not able to give a picture complete in every detail, the outline of everything is there and the details can be filled in by those with special knowledge, and the chairmen of all the committees can be questioned at the annual general meeting on 8 May. Members are, therefore, asked to give as much time as they can afford to consideration of the report and to come to the annual general meeting to blame or praise or just to listen, as people who carry some share of the responsibility for what goes on in their Institute.

Wood of Bath?

The portrait at the foot of this column has been sent to us by Mr. Hatton, the Spa director at Bath, in the hope that the architect shown can be identified. Curiously enough there is no known portrait of either of the Woods of Bath, John the elder (1705?-1754), or of the younger Wood, his son, who died in 1782, so that if, as is possible, this picture is of the younger Wood, there is no corroborative evidence. Does any member know of a portrait of either Wood? Most of the recognised authorities have been consulted, including Mr. Mowbray Green, historian of Bath's architecture, and the National Portrait Gallery, but there is a chance that some architect may know of a portrait in private possession, information about which, besides being important on its own account, may help in the identification of this picture.

GEORGE WALTON HIS LIFE AND WORK

By NIKOLAUS PEVSNER

Fig. 1.—George Walton at the age of twenty-six (1893). Photograph by J. Craig-Annan

I.

George Walton was born in Glasgow on 3 June 1867. His father, Jackson Walton, born as early as 1808, was a painter. He had been a wealthy man when he was young, but his financial position had gradually so deteriorated that his son, the youngest of his twelve children, after going to a grammar school until he was fourteen, had to start as a junior clerk at one of the Glasgow branches of the British Linen Bank. The love of beauty and craving for æsthetic expression hereditary in his family made him attend evening classes at an art school (probably the Glasgow School of Art), the only art training he ever had. Then, at the age of twenty-one, he decided to throw over what looked a fairly safe future and to set up in business as a designer and interior decorator. Now this decision was much more remarkable at the time when Walton took it than it would be now. What made him do it, we shall probably never know exactly. He must have heard of William Morris, whose firm had existed ever since 1861, and who had, in 1877, begun to preach his inflaming gospel of craft and beauty as social ideals. He had delivered many lectures in London and outside—one, e.g., in Edinburgh as the presidential address to the second congress of the short-lived National Association for the Advancement of Art and its Application to Industry. But that was only in 1889. Before 1888, the date when Walton's firm was opened at 152 Wellington Street, Glasgow, Walton had apparently been to London only once for a fortnight, in 1884 or '85. Besides, London would not have offered much to encourage the establishment of a firm of this kind. Apart from Morris's work, there was that of the Century Guild, A. H. Mackmurdo's foundation of 1883, which could be seen at Wilkinson's, 8 Old Bond Street[1]. Voysey had only just started designing wallpapers[2], and the Arts and Crafts Movement did not attain much publicity until the first exhibition of the Arts and Crafts Society was held in 1888[3]. All this being so, it can merely be assumed that young Walton had heard a good deal about Morris's

[1] Cf. N. Pevsner: *Architectural Review*, Vol. 83, 1938.
[2] The earliest illustrations of Voysey designs known to me are those in the *British Architect*, vol. 25, p. 522 seq.
[3] Cf. N. Pevsner: *Studio*, vol. 116, 1938.

ideals and seen some of his printed textiles—the earliest of these came out in 1883—which had found their way to Glasgow.

For Glasgow in the eighties was far from backward or provincial in matters of art. A school of young painters was then in formation which soon became recognised as one of the centres of pictorial progress in Europe[4]. They followed new conceptions first laid down in Scotland with surprising independence by McTaggart shortly after 1880, and then stimulated by the art of the painters of Barbizon and of Dutch Impressionists such as Mauve, Mesdag, Jongkind and the Marises. A great exhibition of the work of these had taken place in Edinburgh in 1886. Besides such examples, there was what Whistler painted in London, Whistler whose *Carlyle* was bought by the Glasgow Corporation as early as 1891. He, probably more than anybody else, impressed the group of the "Glasgow Boys," as they were called—Guthrie, Lavery, E. A. Walton, Roche, Cameron, Stevenson, Henry, Hornel, Paterson, Kennedy, Hamilton, Ferguson and others. In 1890 their work was shown and enthusiastically hailed at an international exhibition in Munich. In 1898, Lavery and E. A. Walton were corresponding members of the Sezession, the famous Viennese artists' association. Now E. A. Walton was George Walton's brother, and he above all was a fervent admirer of Whistler. It is noteworthy in this connection that Whistler was not only revolutionary as a painter but also in some ways as a decorator. His famous Peacock Room of 1874, and also the way in which he furnished his own studio in Chelsea in 1878, and decorated two exhibitions of the Fine Art Society in 1883 and 1884, was novel in the extreme. Those white dados and light walls—extremely different from Morris's grave colour-schemes—pleased E. A. Walton, the painter, so much, I am told, that he called his white cat Dado. Lightness—of touch and colour—was, more generally speaking, what distinguished the new Glasgow pictures from the work of Victorian artists. Whether we examine the grey and silvery green landscapes of E. A. Walton, or Lavery's white, grey and black full-length portraits, or Henry's and Hornel's Celtic fairy world of gem-like impasto—there is nothing stodgy, nothing conventional about Glasgow painting of 1890.

This bracing atmosphere is no doubt chiefly responsible for George Walton's adventure. Success was with him almost at once. It is surprising to see how many decorating and redecorating jobs fell to this young untrained designer between 1889 and 1896, the year when his reputation began to transcend Glasgow. Thanks to a large series of photographs taken by Mr. J. Craig Annan, the distinguished photographer and friend of Walton, a record of this early work is preserved. For most of it is gone by now, superseded by more recent decoration. The following jobs can be mentioned. Photographed in 1891: "The Glen," Paisley; Sir Frederick Gardiner's house in 5 Dundonald Road, Glasgow; Mr. James Gardiner's house in Grosvenor Crescent; shop of Nelson, Shaw and Macgregor, Glasgow; "Thornton Lodge," Helensburgh, for the painter Whitelaw Hamilton. Photographed in 1892: "Park Head House"; in 1894: House at Barrhead; in 1896: Alteration to house at Lenzie for Mr. Craig Annan[5]. James Guthrie's house in Woodside Terrace, a house for Mr. J. Marshall[6], and a house at Dunblane[7] were also furnished by Walton. In the meantime Walton had been in London more often. It is there that he met his first wife. They were married in 1891, and as she was a Londoner, and his brother, the painter, had moved to London in 1893, it can be assumed that George Walton now kept in close touch with what went on in town in matters of design and decoration. This may be of some importance for the understanding of Walton's development round about 1895.

Walton's first work to obtain a considerable amount of publicity was Mrs. Cranston's tea-room at 91 Buchanan Street, Glasgow[6]. Mrs. Cranston deserves the art-historian's unstinted gratitude, for in this first tea-room of hers she made Walton's as well as Mackintosh's name. Walton designed first the hoarding around the shop front during the alterations in 1896 and'97, probably one of the earliest if not the earliest hoarding ever treated as a work of æsthetic significance (fig. 2). He also decorated the billiard room and other rooms. Almost concurrently another café was commissioned from Walton. He had in some of his Glasgow jobs worked together with a young architect Fred Rowntree, a great admirer of his. Thanks to his

[4] D. Martin, The Glasgow School, London 1897.

[5] Illustration in an article by W. J. Warren, *The Amateur Photographer*, 11 August 1899.

[6] Illustrations in an article by Hermann Muthesius, *Dekorative Kunst*, vol. 5, 1900.

[7] Illustrations H. Muthesius: Das englische Haus, vol. 3. Berlin 1905.

Fig. 2.—Hoarding during the decoration of Miss Cranston's tea-room in Buchanan Street, Glasgow (1896). Photograph by J. Craig-Annan

recommendation the firm of John Rowntree and Sons, of Scarborough, now asked Walton in 1896 to decorate their café at 20 and 21 Westborough, Scarborough. While the Cranston tea-room in Buchanan Street unfortunately does not survive, Walton's work for John Rowntree's is still in existence, and, at least as far as the ground-floor goes, almost untouched[8]. A similar but smaller job carried out in 1897 for William Rowntree's at 32 to 39 Westborough is now recorded only by photographs (fig. 12) and a water colour in the possession of the firm[6].

The range of Walton's activity had by then widened considerably. In 1897 and '98 he furnished a house for Mr. J. B. Gow at Leadcameroch (fig. 13)[9], and another one for Mr. S. Leetham, "Elm Bank," in York (fig. 15)[10], the two most complete domestic jobs entrusted to him before 1900. He opened a subsidiary shop at 15 Stonegate, York, in 1898, and in the summer of 1897 decided to move to London. His most prosperous years followed. In Glasgow, besides his headquarters in Wellington Street, he had his workshop in Buccleugh Street, and for a short time—1899 to 1900—a showroom at 278 Sauchiehall Street. In London he lived at 16 Westbourne Park Road until 1901, and then at 44 Holland Street. He designed glass for a firm called Clutha Glass, for which at a much earlier date Christopher Dresser had worked (fig. 3); furniture[11], and textiles (carried out by Alexander Morton's); he showed at the exhibitions of the

[8] I was kindly shown a cash price list of April 1897 illustrated by two pictures of the Walton interior, besides the splendid Beggarstaff poster for Rowntree's Cocoa.

[9] Illustrations in *Academy Architecture*, Vol. 13, 1898, also *Illustrated Building News* 20 January 1899, and *Dekorative Kunst*, vol. 5, 1900.

[10] Illustrated *Dekorative Kunst* l.c.

[11] Recent illustrations *Architectural Review*, vol. 74, 1933, p. 6 (J. Betjeman).

Fig. 3.—Clutha Glass, designed about 1897-8

Fig. 4.—Stand of George Walton & Co. at the Glasgow Exhibition of 1901.

Arts and Crafts Exhibition Society in 1899 and the following years—as he had done once before in 1890—and he decorated an exhibition for the Royal Photographic Society at the Dudley Galleries in 1897. It is through these that he met the principal patron of his late life, Mr. George Davison, head of the European Kodak sales. In 1897 he arranged an Eastman Exhibition in London for Mr. Davison. He then refurnished the Kodak offices in Clerkenwell Road, and soon after that started on a chain of new Kodak shops, in London in the Strand, Regent Street and Brompton Road, in Glasgow, Brussels, Milan and Vienna[12]. These shops, as well as his excellent stand at the great Glasgow Exhibition of 1901 (fig. 4)[13] and the publicity given to his work in German periodicals helped to make his name known abroad. He furnished for Mr. Goshawk a house in Vienna of which photos only survive; he took part in an exhibition in Budapest in 1902 for which he received a diploma of thanks from the Hungarian Ministry of Education. In 1905 a living room designed by him was on show in the Berlin art gallery of A. S. Ball[14].

The most mature achievement of these years of progress and success is "The Leys," a house of comfortable size, built and completely furnished in 1901 for Mr. J. B. B. Wellington at Elstree near London (figs. 5, 16, 17)[15].

Of work carried out during the ten years before the war, not much need be said here. There were some big and important jobs such as the "White House" at Shiplake for Mrs. Davison (1908)[16], "Wern Fawr" (fig. 6), the Harlech home of Mr. George Davison (1907-10)[17], and the St. David's Hotel at Harlech (1910-11; fig. 18), unfortunately burnt down in 1922; smaller houses, e.g., "The Philipines" at Brasted in Kent (1902)[15], "Alma House," Cheltenham[15], and "Finnart House," Weybridge (1905), and shopfronts and interiors (W. Judd, Queen Victoria Street[18], Wellington & Ward, High Holborn (1910), Waterer & Dickins, Bromley).

[12] Illustrated *Dekorative Kunst*, vol. 11, 1903 (article by Hermann Muthesius). Two of these also in H. Dan and E. C. Morgan Willmott's book quoted note 16.

[13] Illustration *Dekorative Kunst*, vol. 8, 1901.

[14] Illustrations *Deutsche Kunst und Dekoration*, vol. 16, 1905, *Berliner Architekturwelt*, vol. 8, 1905.

[15] Illustrations *Studio Year Book of Decorative Art* 1907. The views of "The Leys" are also in H. Muthesius: Das englische Haus, Berlin 1904.

[16] Illustrations *Architectural Review*, vol. 75, 1934 (J. Betjeman), also R. McGrath: Twentieth-Century Houses, London 1934, pp. 79-81 and fig. 6.

[17] Illustrations *Studio Year Book of Decorative Art* 1910 and 1913.

[18] Illustration H. Dan and E. C. Morgan Willmott: English Shopfronts old and new, London 1907.

Then the war intervened, and George Walton—now 47 years of age—was called as assistant architect and designer on to the Central Liquor Traffic Control Board. Between 1916 and '21 he did well over 100 surveys of public-houses, designed furniture, interiors and some unusually pleasant inn-signs. His headquarters was Carlisle, where, as will be remembered, public-houses had got under Government control. It was in connection with this work that Mr. (now Sir) James Morton came into close touch with Walton. His firm had woven some Walton designs before 1900. Now when Sir James had taken over—in addition to his large combine, Morton Sundour Fabrics—the small firm of Edinburgh Weavers in order to establish an outpost of modern design in weaves and prints, he went to Walton to obtain designs. There was something tragic in this episode. Walton, who had never been much of a business man, had not found a safe footing after the end of his Carlisle work. Only few and small jobs were forthcoming, such as a War Memorial for St. Peter's, Glasgow (1920), stained glass windows for Boreham Wood church, commissioned by Mr. J. B. B. Wellington (1923), for whom he also added a wing, a lodge and gate and some wall paintings to "The Leys" (1923-24), the reredos for St. Anne's Derby (1927), the layout of the remodelled garden inside the Bank of England, now replaced by Sir Herbert Baker's new building (1921), the redecoration of Mr. John de la Valette's house at 12 Little Stanhope Street, W.1 (1921), alterations to Mr. W. O. Hutchinson's country house the "Old Vicarage" at Leatheringham, Suffolk (1929), and a row of four small suburban houses in Sterne Street, Shepherd's Bush (1923), in one of which he himself lived (No. 53) (fig. 7). The only larger jobs after the war did not come until a few years before his death. They were once again commissioned by the Davisons; the complete decoration of Mr. Davison's "Château des Enfants" at Cap d'Antibes, in connection with one of his generous and curious charitable schemes, and

Fig. 5.—"The Leys," Elstree, near London (1901)

Fig. 6.—" Wern Fawr," Harlech (1907-10)

the Memorial Chapel for Mr. Davison erected by Mrs. Davison at Cap d'Antibes in 1931 (fig. 9).

Thus Sir James Morton's offer appeared as a boon to Walton, and between 1926 and 1931 he did well over sixty textile designs (fig. 8). However, only a few of them were executed and put on the market, and this is precisely where the remarkable encounter between George Walton and James Morton reveals its tragic note—truly tragic, because no clash between right and wrong occurred, nor, in fact, any clash at all. Sir James Morton had (and has) a genuine love for, and a forceful appreciation of, the most perfect examples of design of his own generation, Voysey's, Walton's, Mawson's works. At the same time it was one of his favourite plans to make Edinburgh Weavers the pioneer centre of the most up-to-date design and weaving in Britain. With this aim in mind he appointed in Mr. Anthony Hunt a manager of exceptional susceptibility to post-war tendencies and of a wholly 20th-century outlook. Mr. Hunt had studied the spectacular Paris exhibition of 1925 and understood its message. He could not help more and more concentrating his selective energy upon a type of designs quite different from any Walton could be sympathetic to. And yet he, too, was a great personal admirer of Walton's " big and magnanimous " personality. Walton on his part, while he conscientiously endeavoured to see the point of view of a new generation, was far too sincere and thoughtful a character to remodel himself according to standards of novelty which he could not fully appreciate. He was too strong to adapt his hand successfully to that new violence, or severity, or dash; and while he thus seemed to stand out for tradition, he was, on the other hand—just like Voysey, just like Baillie Scott—not traditional, or rather conventional, enough to return

Fig. 8.—Textile design carried out in 1930 for Sir James Morton

Fig. 7.—Houses in Sterne Street, Shepherd's Bush (1923)

to that unproblematic Neo-Georgian into which English 20th-century architects had converted domestic building, or to that British Empire Palladianism which just then became the curse of public architecture.

For George Walton was strong and unswerving in his ideals, despite his quiet and friendly manner. Mr. Voysey has thus described him in an obituary note which is equally telling of his own and of Walton's character: "May one who has known George Walton for 40 years intimately be allowed to testify to his lovable nature. He could not say an unkind word about any man. If there were any he did not like he was silent. He was sensitive to an exceptional degree, and a beautiful colourist. His ingenuity was such that he could have made a fascinating design out of Hell fire. He was the most gentle of men, with strong feeling always under control."

He died on 10 December 1933.

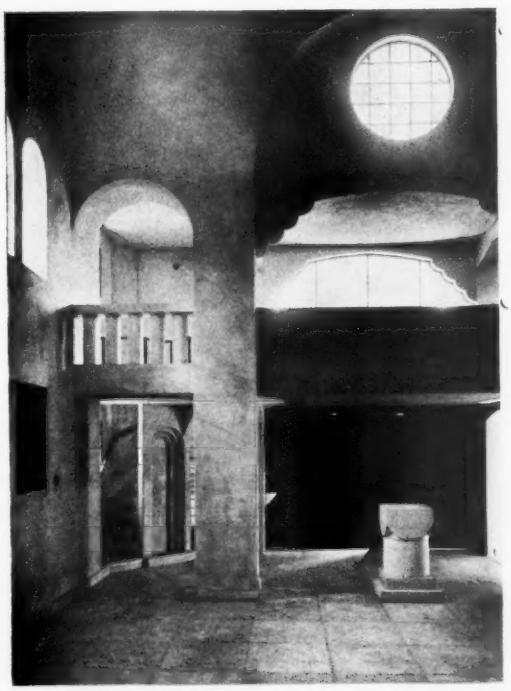


Fig. 9.—Interior of the St. George Memorial Chapel, Antibes (1931)

II

I have one purely personal reason for publishing this account of George Walton's life and work. In my book on the *Pioneers of the Modern Movement*, which came out three years ago, I stated that Art Nouveau originated in the year 1893 in one particular house in Brussels designed by V. Horta, and I also stated that the only noteworthy contribution of Britain to the style of 1900, i.e., the style leading beyond Voysey, Baillie Scott and Ashbee, was Charles Rennie Mackintosh's work. Now both these statements require revision. I have revised the first in a paper published on A. H. Mackmurdo's activity[19]. To revise the second is the task of the following pages.

George Walton's name should never have been left out of a book on the pioneers of the modern movement. His designs, mainly those of 1895 to 1905, are amongst the most brilliant and historically most significant examples of the rapid and constructive progress of Britain away from William Morris towards a new style of the new century.

To prove this it will be necessary to undertake a detailed examination of Walton's early style in all its stages, whereas his later style can be summed up more perfunctorily. The problem from the historian's point of view is this: By two methods the style of the 20th century was reached. One was the gradual and gentle simplification of suitable forms of the past, until almost unnoticeably fundamentals of shape and decoration were recovered. The other was a violent breaking-away from tradition and the creation of a completely new idiom of decorative expression, namely, Art Nouveau. Britain was foremost along both lines. Voysey stands for the first, Mackintosh for the second. Others, Baillie Scott, for instance, seem to stand between the two, taking from and giving to both. The same is true of George Walton, who, however—and that makes his case so important—started earlier than Baillie Scott, and also, it seems, than Mackintosh. It is with regard to these dates that a closer investigation has to set in.

There appears to be a great difference between Walton's decorative schemes in the early nineties (fig. 10) and the hoarding for Mrs. Cranston's tea-

[19] *Architectural Review*, vol. 83, 1938.

Fig. 10.—Wall-stencilling in a room decorated in 1890-1 for the painter Whitelaw Hamilton. Photograph by J. Craig-Annan

room in Buchanan Street (fig. 2) or the fireplace in Mr. Gow's house at Leadcameroch (fig. 13) of 1896 and 1897-98 respectively. What has happened is in short this: Walton at the beginning of his career proves an ardent follower of William Morris, whose textiles he actually used a good deal for upholstery. His own designs with symmetrical pairs of animals or monsters and closely spreading leaves have a similar "all-over" quality as Morris's. He freely incorporates pieces of antique furniture and the old-world effect of dark beams along white walls and across white ceilings. One may recognise, knowing which way Walton was going to develop, that a certain flow of lines sometimes distinguishes his designs of furniture or fireplaces from those of the true partisans of the Arts and Crafts. On the whole, however, the difference is not great. The hoarding, on the other hand, and the fireplace at Leadcameroch are designed as a deliberate challenge to tradition. Where is the boldness of the startlingly big ornament on the hoarding derived from? Where from its happy and clear colours, and the irregularly heart-shaped spots on the background? And what is the origin of the wilful curves of the fire dogs? To discuss this is to define Walton's position in the evolution of Art Nouveau in Britain.

Considering the part played by Mackintosh in the decoration of the Buchanan Street tea-room, the first supposition would probably be that Walton evolved his style under Mackintosh's influence. This, however, can hardly be so, although details will have to remain doubtful so long after the events. Walton was not only two years older than Mackintosh—which would in itself not mean much—but he was a successful decorator when Mackintosh was still a student of architecture, though an exceptionally successful student winning one prize and one scholarship after another. I am told that Walton's attention one day was drawn by Mr. Keppie to the young draughtsman working so brilliantly in his drawing office "very much in your style. You should meet him." How can the actual dates be ascertained? Mackintosh's earliest work, the Glasgow Herald Tower of 1893-94[20] foreshadows already in some details those violent lines driven, as it were, by inherent energies, which characterise his later style. They get more concise and forceful in his drawings of 1895 and 1896 with the strangely elongated female figures of Toorop appearance[21]. When did Walton arrive at the style of the fireplace? Most of his work of before 1896 seems more traditional than Mackintosh's. And yet, amongst the photographs which chance has preserved, there is that of a stencilled wall decoration for his brother's, the painter's, house, and this, done in 1891 (fig. 11), proves him capable of entirely unconventional work at such a surprisingly early date. Now this has no doubt nothing of Mackintosh's frenzy, and it may well be that for a short

[20] Illustrated *Academy Architecture* 1894, p. 89, under the name of Honeyman and Keppie. Also H. Muthesius: Die englische Baukunst der Gegenwart, Leipzig 1900, plate 17.

[21] Some illustrations *Studio*, vol. 11, 1897.

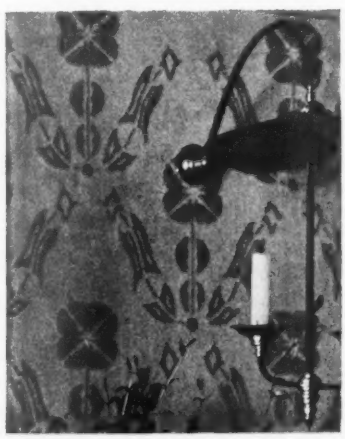


Fig. 11.—Wall-stencilling in a room decorated in 1891 for E. A. Walton, the painter. Photograph by J. Craig-Annan

time about 1896-97 Walton fell under the spell of Mackintosh. Walton's own idiom was probably gentler, more amiable ; determined but not wild. It is to be seen in the wall decoration of 1891 just as clearly as in that of the Rowntree café of 1896 (fig. 12) and that of the Leadcameroch house. Subtly and exquisitely drawn individual motifs against a plain or very lightly patterned background, a tulip, a butterfly, some stray long-stemmed flowers and leaves (as in the silk tapestry on fig. 14, which was used as stencilled wall decoration at Leadcameroch).

These Walton motifs have nothing to do with Mackintosh and show at any rate that his liberation from Arts and Crafts sombreness took place before Mackintosh became an active power in Glasgow. Once more the question of sources therefore arises. Voysey is, of course, the first name that must occur to anybody familiar with the style of those decades and looking at a design such as fig. 12. And yet another rather intricate problem faces the investigator here. Voysey himself, though ten years older than Walton, did not begin at once to express himself in the new language. If his development is followed as closely as possible, his style—the style which was to influence the Continent so decisively—appears completed in 1893, when the newly founded *Studio* (Vol. 1) illustrated pieces such as the grille on p. 37 or the work-box on p. 235. The *Studio*, of course, was known to Walton, and Voysey personally very soon too. Thus on Walton's stylistic progress about 1896, Voysey, the great man of the day, may have had a considerable influence. But the fact remains that this new character occurs already in the pattern of 1891 (fig. 11), and here, to the best of my knowledge, Walton was ahead of Voysey. There are at least no illustrations of Voysey designs of such an early date and such an independent character available, neither in magazines nor in Mr. Voysey's own admirable collection which he kindly allowed me to examine more than once. Here, then, Walton seems entirely on his own, unaided in his conquest of new ground, or at least almost unaided. Mackmurdo, whose amazingly modern wallpaper design of 1890 the *Studio* illustrated years after[22], he can hardly have known. But there was the Glasgow atmosphere, the sense of adventure in the " Glasgow Boys," and there was, above all, Whistler. Whistler's butterfly is perhaps the motif most closely related with

Fig. 12.—Corner in W. Rowntree's Cafe at Scarborough (1897)

Walton's hoarding and his stencilled designs. In fact Walton stated in a letter to the *Architectural Review*, published only a few months before his death, that his work was " influenced considerably " by Whistler, and that " arrangement and colour " of Whistler's exhibitions in London were " the most remarkable events of the time "[23].

So much as an attempted explanation of Walton's early style. For a short time he seemed to join forces with Mackintosh, and the two together created a Glasgow style of 1900 so full of character and definition as was to be found in very few European centres. However, they were really of widely differing human qualities. Mackintosh's genius

[22] Vol. 16, 1899, p. 192.

[23] Vol. 74, 1933, p. 43.

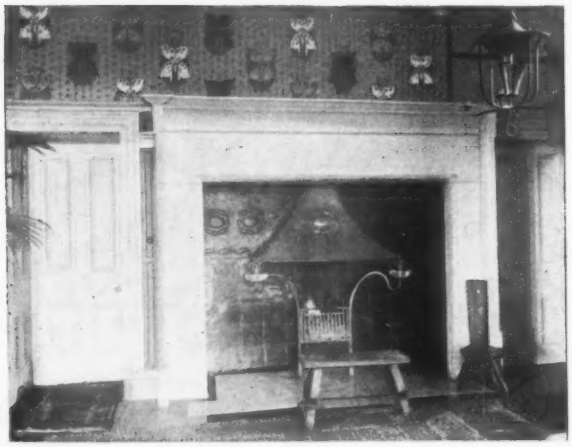


Fig. 13.—Fireplace in Mr. Gow's house at Leadcameroch (1897-8)

thrust him into unforetold spatial adventures, Walton with all the fervent intensity and integrity of his character endeavoured to disentangle himself from what might be more novel than genuine. The front of his little shop in York (1898), modelled to a certain extent on Georgian lines, was a first indication of a change from youth to maturity. Furniture such as that illustrated (fig. 15) ("Elm Bank," 1898) points in the same direction. How violent, how ruthless, appears Mackintosh furniture in its distortion of timber if it is compared with the gentle slenderness of this chair, the straightforward surfaces of this wardrobe. The stand of Walton's firm at the Glasgow Exhibition of 1901 (fig. 4) and exterior and interior of Mr. Wellington's house

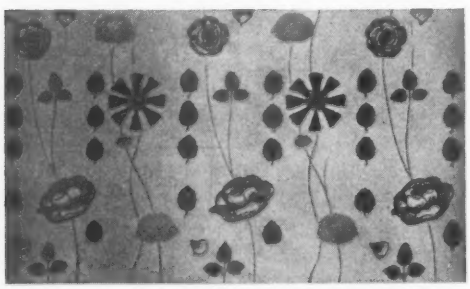


Fig. 14.—Tapestry designed about 1897 and woven by Alexander Morton's

"The Leys" (figs. 5, 16, 17) are perhaps Walton's most accomplished works. It is surprising to see how he seems to have cut out all vagaries from the façades. It is only the lettering that tells in the exhibition stand, only the restrained motifs of the porch in "The Leys." Otherwise this designer who had never learned the architectural profession expresses himself (in his first job of the kind incidentally) in the purest terms of architecture. The placidity and serenity of the building is entirely dependent on the right proportions of roof to walls and windows to walls. Who else was able in England at that date to combine sobriety so successfully with charm and a feeling of comfort? Very few indeed.

Voysey, we know, kept his gentle hold over Walton. The billiard room in the centre of "The Leys" can serve to prove that. With its lovely light fittings, its slender metal balustrade round the gallery, and its enchanting transparent screen of narrowly spaced upright wooden bars separating the staircase entirely from the room, it is one of the most delightful interiors designed by Walton. This type of screen is first to be found in Voysey's houses in Hans Road, Kensington (1891-92)[24].

[24] Illustration *Studio*, vol. 1, 1893.

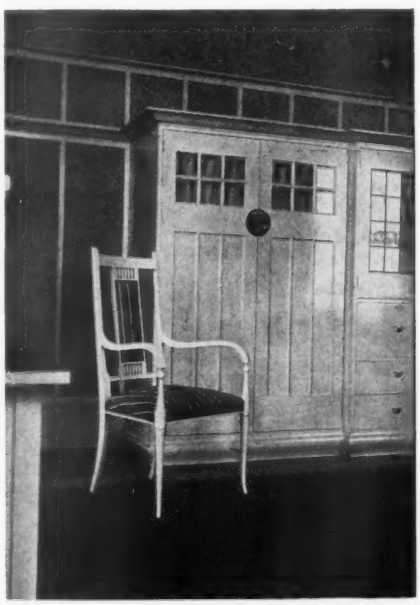


Fig. 15.—Chair and wardrobe at "Elm Bank," York (1897-8)

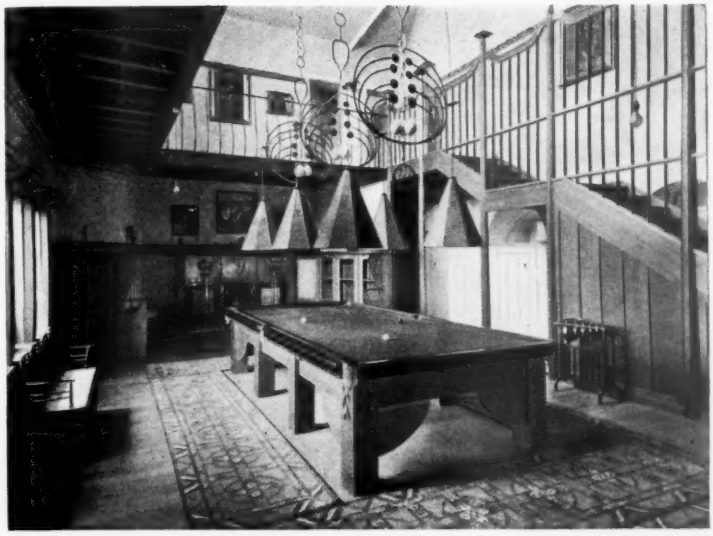


Fig. 16.—" The Leys," Elstree. Billiard Room (1901)

Fig. 17.—" The Leys," Elstree. Fireplace in the Ante-Hall (1901)

He used it again, e.g., in the most famous of his houses, " The Orchard," at Chorley Wood (1900), and Mackintosh almost at once took it over with the utmost enthusiasm, as the ideal medium for his spatial endeavours (Art School, Glasgow, 1898-99, " The Hill House," Helensburgh, 1901-03, etc.). One detail needs some further comment: the tapering wooden posts with their bold entablature. They are so typical of that particular moment in the evolution of the new style, not wholly new as a feature but wholly new in their meaning, wilfully elongated, as slender as the curves of Art Nouveau and as challenging too, with their widely projecting tops held up without any visible effort. Voysey used these posts, and before him Mackmurdo at the Liverpool Exhibition of 1886[25]. For this front, so amazingly ahead of its time, Mackmurdo seems to have invented the motif, which was then, owing to Voysey's influence, repeated everywhere, even in commercial furniture of about 1900. By no means did Walton, however, repudiate ornament at this stage, nor at any other. He only kept it under close control now. It blossomed out in the transparent, genuinely imaginative metal work above the light fittings, it gathered round the fireplace of the hall, and—to mention another room at " The Leys "—it emphasised some of the panels around the otherwise bare fireplace of the small ante-hall (fig. 17).

Walton's buildings, after this stage had been reached, are ever-changing solutions of the same problem, the encounter of an imaginative, entirely unconventional architect with the external and internal requirements of jobs which he is too honest and conscientious to disregard. Thus there is a decidedly late Georgian flavour about the " White House " at Shiplake without Georgian forms being anywhere copied. It is the atmosphere of the Thames borders acting upon the architect, just as the atmosphere of the Welsh coast had acted upon him when, during the same years, he built " Wern Fawr " and the St. David's Hotel in Harlech (figs. 6, 18). The local stone in its colour and weight and the massiveness of the square blocks re-echo the menacing severity of the bald hills and the grey sea. Neo-Romanesque some people may call the Memorial Chapel at Antibes (fig. 9). In fact, the personal transformation goes here as far as in the previous buildings, and how precise Walton was in the formal interpretation of the emotional or

[25] Illustration *Architectural Review*, vol. 83, 1938, p. 142, and *Studio*, vol. 116, 1938, p. 226.

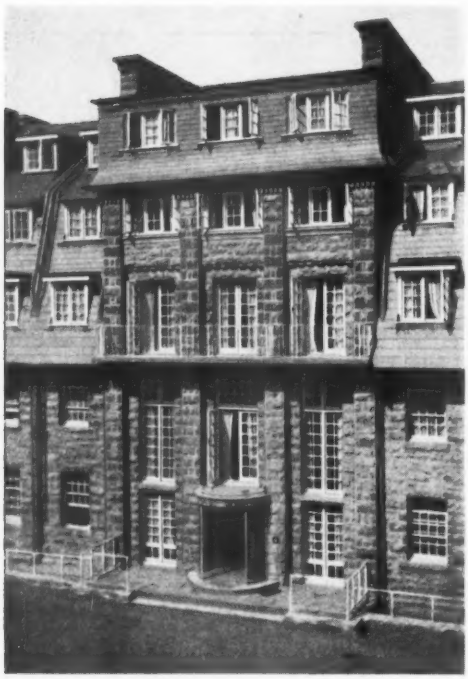


Fig. 18.—St. David's Hotel, Harlech (1910)

functional requirements of a task is most clearly proved by the Sterne Street houses of 1923 (fig. 7), where a straightforward job finds a perfectly straightforward answer. The " Sachlichkeit " of these small houses makes the surrounding builder-built houses with their bay-windows and their half-timbering look all the more false and fussy.

It is perhaps this concentrated and thoughtful approach more than anything that has enabled the untrained designer to become what he became. George Walton was, as his friends tell you, a quiet man, kind and silent. He was happy in his work, not a fighter. Thus he has never broadcast his ideas in writing, nor has he—as far as I know—more than once publicly spoken of them. This only lecture of his, delivered in 1898 or 1899 to a Scottish Architectural Association, contains, however, so much of importance to an understanding of his attitude to art and design that it must, in conclusion, be mentioned. A few quotations may suffice : " There is no reason why machinery should not be used in certain cases provided always that no attempt is made to use it as if it had brains." " The use of material in its natural state is delightful." Walnut without french polish, and yellow pine in its true colour are recommended. If timber is to be painted, let it be white for bedrooms, or otherwise grey or green. Amongst colour schemes, the following are suggested, and they are all typical harmonies of 1900 : Walnut, grey, silver and rose ; satinwood, ivory and canary ; mahogany, crimson and gold.

The most interesting remark stands right at the beginning of the lecture. Walton emphasises that he is not a craftsman himself, but " a great deal is to be learned from the craftsman who intelligently executes one's own designs." Now, in point of fact, those who knew Walton say that although not a creator with his hands like William Morris, he was a genius in understanding the nature of materials and their handling by craftsmen. In this again he stands precisely where his style places him, right in the middle between the Arts and Crafts and the Modern Movement. Morris believed only in salvation by hand work, the designer of to-day regards craft only as laboratory work for the preparation of standards for machine production. Walton—just as Voysey—no longer makes, but what he designs is conceived in terms of craft production. His metal-work needs the skilled worker, his stencil designs, his furniture—it is all individual. This individualism of the designer of 1900, evoked by Morris, was a necessary attitude if a new style, a new grammar of form was to be created. George Walton plays an important part in this development, important enough to justify his introduction into the history of British art in so much detail.

* * *

Note : Photographs of most of the work mentioned in this article were presented to the Royal Institute of British Architects by Mrs. Walton. To her and Mr. Edward Walton I owe much help and information. I gladly use this opportunity for recording my gratitude to them, and also to Mr. J. Craig Annan, Mr. John Dunlop, Mrs. G. Ellis, Mr. W. O. Hutchison, Sir James Morton, Mr. A. W. Paterson, [*F.*], Mr. Colin Rowntree, [*F.*], Mr. Douglas Rowntree [*F.*], Messrs. John Rowntree & Son, Messrs. W. Rowntree & Son, Mrs. P. Scott, Mr. A. Shepherd, Mr. R. Macaulay Stevenson, and Mr. J. B. B. Wellington.—N. P.

A still from the Realist Film production "Roads Across Britain." "The average speed of a city 'bus to-day is only two miles an hour faster than that of a horse 'bus thirty years ago"

A SQUARE DEAL FOR LONDON TRAFFIC

By MERVYN O'GORMAN, C.B., D.Sc.

A paper read at a public meeting held in connection with the R.I.B.A. Road Architecture Exhibition on Wednesday, 8 March 1939

Sir John Anderson said : "A vital link in the chain of civil defences is the proper organisation . . . of the various forms of inland transport." Those words were quoted in *The Times* of 6 March. In the same paper of the same day I find on the L.C.C. Estimates for 1939, after a gross figure of £50,000,000 is suggested for London housing and slum clearance, the notable words "No figure is included for the Bressey Highway Development scheme of improvements."

I am not going to advocate fast driving in London ; I too want to walk across the road leisurely. To achieve that modest security, there is one way only. It is paradoxically to double the fluidity of London's vehicular traffic (from 8 m.p.h. to 16 m.p.h.). The paradox is that this necessitates no speed increase in any street, at any time, but only clearing the delays and hold-ups—in fact, the abolishing wherever possible of vehicular movement in spasms. These spasms, though dear to some pedestrians, are a snare for them, as bits of cheese in a trap are dear to the mice. Neither their progress nor their safety is promoted by spasmodic flow, albeit some think otherwise. But then a snare is only a snare to those who don't see it's a snare.

A Big Problem

London houses 8½ millions, or nearly a quarter of the people of England. Her 2,330 miles of tangled streets carry an olla podrida of about 750,000 motors, 2 million bicycles, trams, prams, and barrows, as well as six to seven million walkers*. There are each year 3,220,000,000 road journeys made by passengers by bus, tram, and trolley (nearly 10 million journeys each day) without counting those who go by taxis, bicycles, cars, or those millions who brave the weather to and from railway stations on foot. The mere walking to and from the public service vehicles involves Londoners in walking a distance of 270,000 times round the earth each year. Beyond this there are millions of van-loads of food, clothes, and other objects all necessarily dis-

* Professor Mark Jefferson says : "Once a city is established as the largest in the country, that mere fact gives it impetus to grow. Its greater opportunities attract inhabitants from the provinces. . . ." And again : "In the 40 most important countries, the largest city in each of 35 was at least half as large again in population as the next largest. In 28 countries the largest centre was twice as large as the next, and in 18 countries it was 3 times as large." (*e.g. The Times*, 16 Jan. 1939.)

tributed by road, and much of this has involved a previous personal selection by shoppers.

There are 700,000 theatre seats to be filled daily. That is an example of a service collected by the road-user as buyer. There are about 25 million fire-grates to be filled. That exemplifies a delivery effected by the road user as seller or distributor. This trade must all pass by road. An inadequate road plan accordingly imposes a tax on every item, but that tax is not collected. It is £20,000,000 a year wasted in waiting. Here is, then, a big economic problem. It is urgent for reasons other than economy, amenities, health or æsthetics.

When war threatens, road traffic becomes different in kind, but is intensified in volume and urgency—the 2,000,000 to be evacuated, the fire appliances (lately increased tenfold), the ambulances, the gas-mask men, and the A.R.P. guns can only go via the streets. The 400 square miles of London's built-up area is a target of humanity exposed to war wounds which can only be tended via the roads.

London's docks bring in some 60 per cent. of England's imports for distribution, much of it by road, to feed London. She must still be fed and coaled by road transport, whether or not the railways or the electric supply are cut by bombs, or the port be closed by unfriendly air and submarine activities. By the roads and only by the roads can life be carried on when rails are cut. All air targets are difficult, but rails are a linear target, and therefore the easiest target known to airmen.

There have been 60,000 casualties killed or wounded in London's streets in ten years, and the number grows. Her traffic moves every year more slowly, and it is this very slowing that compels the increase of the number of vehicles (and vehicle hours) needed to achieve the day's work in the day. This increase due to slowness applies as much to buses as to delivery vans.

In the last six years the vehicle counts for London show an increase of 35 per cent. Every extra vehicle and every extra hour they spend in the denser traffic conditions allow the public to expose themselves to more numerous emergencies.

The Crowd of Houses

The crowding together of dwellings clashes with every wish for national fitness, but it continues ; to-day the main accentuation is of the suburban concentrations. It is not the size of the town, but this crowding and bad alignment that conduces to the evils that philanthropists ascribe to urbanisation.

Thirty-three years ago the waste of time, health and wealth had already stabbed the Londoners' imagination. They called for reports and committees. They have had nine since 1905 (that was when " Kingsway " was opened). These advisers between them very properly indicated the cure : One single highway authority, a unifying road traffic plan, and the allotment of adequate funds for it. In 1938 none of this has been started. Why ? In 1938 we still invoke new *traffic restrictions* in disregard of 33 years' proof that *restricted vehicle* movement accentuates the pernicious massing of dwellings together.

Without plan we pull up a bit of the jungle here and there at enormous cost—but so long as we provide no clear traffic runs along " through " routes, so long the 130 cross junctions which open into each mile of existing streets will impose intolerable delays alike on public, private and commercial vehicles. Individual citizens can only avoid these delays to their daily journeys and the cost thereof by bringing their dwellings near their jobs.

The only safe medium for the main movement of motor traffic is the planned " through " road. We have none. The Chinese have a proverb " A dragon out of deep water is the terror of shrimps." London's road layout provides the traffic dragon with less deep water and more shallows and shrimps than any capital in Europe. Having neglected advice on road policy and denied him the deep water, we are indignant at the discovery that an indispensable slave has become a dragon of terror. Indignation is not a policy.

Successive Ministers admonish him with much self-advertisement and zero result. Admonitions might now be usefully directed to the town herself. Let her council act on the good advice she herself invited : Give motor-ways to her motors, and co-ordinate her roads to a plan. To-day she has a plan. It is a cohesive whole. Let her thank Sir Charles Bressey, adopt it as a whole, and even should construction work be delayed, forthwith safeguard the sites of his routes as a whole (insisting on 100 per cent. grants for safeguarding). Above all, stop the fatuous selection of snippets from his scheme. That would be a blind, a shabby way of shirking the whole.

British Intelligence

People live in town for one reason only. It is to obtain those manifest advantages of co-operation that can only be got in their fullness from having " quick access " or " nearness in time " to all the other people there. Such " nearness in time " does not to-day necessitate nearness in position, and it achieves " quick access " to the countryside also. Both are good. That is the useful way to induce the agriculturist to work in the country. The reasonable man expects a town to be laid out for the purpose of a town—and quick access is the purpose of a town. Far from being a perversity, it is a mark of intelligence to congregate in town.

We may congratulate ourselves that 80 per cent. of England's population is thus intelligent—at any rate 80 per cent. is urban. Given fluid and cheap road transit, this is not incompatible with a vigorous and

remunerative development of agriculture, and the preservation of rural England. Administrations exist for one reason only—to foresee on behalf of the collectivity. But something has gone wrong. Why is London inert when " the nearness in time " that her vital activities, and her health, depend upon is vanishing? She has been told the cure.

The Reason Why

We can realise that the dearer and slower road traffic becomes, the more ardently does the worker (black-coated or other) insist that his dwelling be close to his job. Thus grows a demand for " near in " dwellings, which tend not only to mass houses together but to increase their rents and the site value of the town land. Those who will garner these increments have consciously earned them by a foreseeing investment. Herein, however, arises a new interest in conflict with that of the town. The augmentation of these values is threatened when anyone proposes to abolish slow and dear movement by a free flow of " through " traffic. This threat breeds a passive opposition to " through " routes. The longer the new road-making is delayed the dearer is the land for the new road-making.

London's nine traffic reports are like the nine Sibylline Books. The more of them are rejected, the dearer the rest become. Sir Charles Bressey's book is the latest. Tarquin was afraid of the price, but he bought the last book. Will London be as wise? Who for this purpose voices the will of London? The administration of her highways is sub-sectioned among 109 supreme local authorities. The local rate-paying shops of each parish not unreasonably desire to retain their local purchasers' custom. They often have no other. This desire finds proper expression in their local council, not as opposition to bits of local road widening—but in a marked reluctance to being rated for " through " routes which might tempt their clientele to markets farther afield.

Rising Values

Besides the shops there are also powerful building societies, banks, insurance corporations, and others of equal respectability who, as mortgagees, have financed the " near in " buildings to the extent of hundreds of millions. Respectability is compatible with awareness of one's interests, and sober men have observed that a slow and dear road transport has consistently been attended by the rising value of their mortgages. The security of their millions has been enhanced in proportion as the demand for " near in " dwellings is intensified by highly taxed and acutely congested road transport.

Many local authorities themselves have seen that this packing of dwellings leads to an automatic increase of assessments, and so to more local income, with little corresponding increase of expenses. The private house-owner, even if a " through " road in his area did not mean an extra highway rate, feels no ardour for routes that may deteriorate his capital increment in his house. He would agree that general amenities and general trade must result from the free flow of " through " traffic in roads clear of shopping centres, but he prefers a cash increment to birds in the bush.

A Lame Centipede

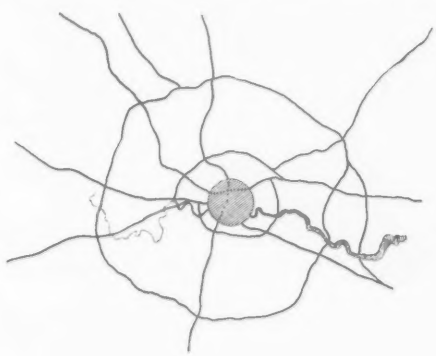
Under these diverse influences London moves towards a road plan like a centipede whose progress depends on one hundred several feet that face in conflicting directions. Not even the threat of a bomb can accelerate her. On the contrary she stops dead—on the ground that any step is " a long range scheme " to be postponed.

These difficulties are not due to defects in our municipal cradles of democracy—but in the way the centuries have evolved a sub-divided administrative hierarchy never designed to utilise the new versatility and range of road traffic. The remedy might lie with Parliament, but her omniscience falters when it comes to foreseeing the impact of new sciences on the social and economic order.

Money for Roads

A man who proposes to make a building in which to operate remunerative machine tools would regard that building as a capital investment. If he already had the tools in store, he would hurry up about the building. When, however, a public authority would build a road for existing remunerative machines to operate on, it is not called investment, but expenditure. To this word expenditure the adjective " spendthrift " is easily applied when the interests for inertia wish to popularise inertia. A local council will be urged to limit its expenditure to local widenings—or to ask for bigger Treasury grants. This latter pleases all the local ratepayers, and can reasonably be expected to achieve delays if nothing else. Within the breathing space thus engineered, if enterprise builds on the sites of " through " routes, these routes become bottled up and corked down.

Thus suavely may the Bressey report be relegated to



Sir Charles Bressey's plan for London

the cellar of forgotten things, there to ferment with the previous eight vintage reports.

Perhaps neither the Minister of Transport nor the Treasury wish to scrap the Bressey scheme, but if they were to, some Minister might tell the House that " the entire initiative for safeguarding the sites (for the Bressey " through " routes) rests with the local authorities," adding " They alone have the necessary powers." I have no insight into Mr. Burgin's wishes, but that is what he did tell the House on 25 May 1938 (Highways and Bridges, June 1938)—of course, he spoke the truth.

Grape Shot

What he did not do was to seek legislation (as was found necessary for the 1937 Trunk Road Act) to transfer these powers to the kind of single authority that alone could carry it out. On the contrary, he has again revived the old device of cutting down the traffic to fit existing roads, while abstaining from any assurance to implement the Bressey scheme. His intention (published in the *Daily Telegraph* on 20 October 1938) is that " those drivers who want to visit London are to be induced to leave their cars on the outskirts." This " inducing " appears in the form of grape-shot, viz., drastic proposals to compel this result. He is to cut down the two hours allowed on parking places to one half and to extend his " no waiting " rules ruthlessly. These doings will, no doubt, keep the suburban car out of London, but if it postpones the Bressey scheme it is anti-economic. Within a year it will increase congestion. It is anti-economic because it ignores that in the working week all vehicles, public or private, are engaged in the economic acts of distributing, selecting, or collecting goods and services. I have yet to hear of someone who motors in London on a weekday for the fun of it.

Rush Hours

The real congestion trouble is the rush-hour capacity of main routes for simultaneous " through " travel. To seek relief by telling all car-owners who motor into London to use public vehicles is to disregard facts and consequences. Paris, Berlin, Rome and New York know that what mainly absorbs road value and retards traffic flow is not the private car.

Here is the position : (1) In our patchy climate* many elderly people, suburban people, busy people, and people with children or parcels of purchases, as well as commercial travellers, supervising engineers, etc., require a vehicle from door to door ; they can get no effective equivalent service or shelter from bus or train. They do get it from their little car, and thousands have established their suburban homes in that confidence. Other thousands enter London from all England as visitors by car for economy, convenience, and shelter in the rounds they make on whatever business brought them to town.

* Voltaire said after two years' experience, " A Londres il n'y a pas de climat ; il n'y a que des temps." (London has no climate—only weather !)

More Taxis

(2) Since London's main daily movement in or out is roughly simultaneous, the taxicabs now in commission cannot deal with the extra needs of private car users in addition to their normal work. Should the victimised car-owners have recourse to taxicabs, the extra number of taxis to give the service needed will not be far short of the number of the excluded suburban cars.

(3) Each taxi, unlike the car it replaces, must earn its driver's livelihood by cruising the streets throughout the day. Cruising cabs are far greater makers of protracted congestion than are cars awaiting their owners in parking places, or in the most unobtrusive places findable. No power has yet succeeded in preventing cabs from converging on and crawling in the streets which are the likeliest source of fares—and dallying to the utmost in those dense traffic streams. This abuse of street space and these concentrations will be greater the larger the total of cabs—while an impoverishment of the more numerous competing taxi-drivers will none the less ensue. Even if sufficient distributed cab-rank space could be found, it would be put to better use as extra parking facilities for the less obstructive cars.

(4) *Absorption of Road Value* : A notable quality of cars is that they keep well up with the speed of the stream they move in, and, except at crossings, rarely initiate or compel any stoppage on other vehicles in rush hour traffic. Their absorption of road value at these hours is thus negligible compared to that of the vehicles which dominate main route movement, and habitually inflict general traffic pauses for every pick-up or set-down ; I mean, of course, our invaluable buses. Their fixed stops should long ago have been given road accommodation. They should draw out of the stream to embayments which should be created before any assault is made on the business and economic life of small suburban dwellers and visitors to London.

A Lobster's Complexion

The new proposals for hampering traffic in 1939 will intensify the inducements on suburban people to crowd yet " nearer in." It is sorry statesmanship. To tell them that four walks a day to and from railway stations (frequently in the rain) is for their good, or to stand in rows on pavements that are already too narrow awaiting a bus that may or may not seat them, is as comforting as it would be to tell a lobster that boiling alive is good for his complexion. He doesn't find it convincing. The " daily breader " had saved up for his car precisely because he knew these miseries. He had experienced the long day in wet boots at the

office, or the weary cross-town journeys by changing from buses or trains, etc. Devices to curtail by regulations the vehicles the citizen needs instead of providing him as a road user with the moving space that his business requires are proved to be bad ; to force people into flats ; to increase congestion and so to thwart themselves. Even if this were to succeed in postponing the town's traffic plan, it merely makes it more inevitable and more costly, after imposing much hardship.

Leaving critical for constructive considerations, we can enlist three contributors to safe and fluid traffic—first, the Vehicle, second, the Road Layout, third, the Traffic Control.

(1) *The Vehicle* : The motor has a peculiar contribution to make to the planning of a large town which the layout of roads for horse traffic does not enlist—even by widenings.

All motor vehicles can be trusted to prefer, when they have a choice, a longer route of least time loss rather than a shorter, more direct but encumbered road. This notion led to the first by-pass. This peculiarity of the motor once enlisted might have been safeguarded with priceless gains of amenity, health and traffic fluidity, but the chance was missed.

We have blindly evolved the by-pass into a ribbon development, when we could easily have made it as a motorway.

(2) *The Road Layout* : We cannot eliminate these errors and horrors of the past, but we need not repeat them. Eighty-two per cent. of London's built-up area has no buildings on it—the trouble is the alignment. We cannot re-align without demolitions, but we can elect to make our demolitions of only the worst property by planning our re-alignments as ring motorways. We could even avoid demolitions by motorways in tunnels. A ring motorway round the hub of London is as essential as drains are. It saves life and health. It increases productivity. It diminishes costs. It improves the mobility of labour, which is a known social need. It becomes invaluable when war may oblige a " black out " order.

It multiplies our fire appliances and our ambulances by making them prompt. It is an investment in peace which becomes a defence in war. It is remunerative because the penny saved is the penny earned, and it is a very big penny.

The ring motorway can enclose any appropriate crowded area. It must bridge over existing roads or pass under them, and not incorporate them. It must have no frontagers and no pedestrians, bicyclists, or horses. It can be a tunnelled ring. The relief thus initiated within the area enclosed is threefold. It permits the " service " vehicles that are delivering within the area enclosed to move among less obstructions and risks. Their work is therefore quicker done. The number of vehicles (or vehicle hours) required to complete the day's distribution work in the day is therefore less. The lessened presence of vehicles progressively gives rise to yet clearer service streets and so the relief grows at a sort of compound interest. The " quick access " provided by the ring motorway attracts to its neighbourhood those foci, such as theatres, stores, markets, etc., on which the public converge, and as we know, £50,000,000 worth of London is rebuilt every ten years.

The captains of live businesses will by degrees withdraw premises from the costly central sites where people can't easily go in favour of the cheaper peripheral sites, where they all can.

In the hinterland of a ring motorway, such as might pass near the eleven terminal stations of London's hub, parking space will not be prohibitively dear. Enterprising " foci " will provide their clients parking room, and adequate embayments for buses.

(3) *The Traffic Control* : The segregation on to the motorway of those town motors whose function is internal distribution, but which are on the " through " part of their journey, requires no compulsion. They will prefer the motorway just when it is the way of least time loss. All other units must from the outset be excluded from the motorway. One outcome of this exclusion of pedestrians and bicyclists is that the motorway cannot become a street. It can have no frontagers, or shoppers, or jay walkers, or beacons. It cannot be ribbon-developed, or have 130 cross junctions to the mile.

The Minister of Transport (who could have stopped ribbon building by exercising the veto, which Parliament gave him against frontagers' access) will at long last have done what he was appointed to do, assisted the road transport on which the life and health of London depends.

He must himself implement the Bressey report, and not ask local councils for 40 per cent. of the cost. He must plan the necessary three concentric ring motorways and their spaced trumpet junctions. He must make sloped pedestrian subways everywhere, and adapt them as shelters from archie splinters, compel the name-plating of all corners of all streets, utilise the " beacon " poles to carry the street name-plates instead of yellow blobs. Ensure 18 m.p.h. in the non-stop vortex of all roundabouts, flare all sharp pavement corners, use only the standard road signs, provide embayments for bus stops, cure cabs of crawling, unify the control of all main London routes, restitute to transport a bad form of taxation by spending it on roads. Support the good railways by what subsidy he pleases, but abandon the futile crabbing of the motor to help the train. Arrange that no more Government offices are built without providing the parking space requisite for their staff and visitors ; remove the 12 and 20 m.p.h. speed limits which are based on a technical mistake—and finally write out 100 times

" Bad road communications corrupt good road manners ! "

Some Recent Inns in the State Management Districts

Architect: HARRY REDFERN [F.]

At a General Meeting in 1932*, Mr. Basil Oliver [*F.*] first drew the attention of the architectural profession to the work on inns carried out in certain north-country areas under the State Management Districts Board of the Home Office and the Scottish Office. This article illustrates some of the more recent work carried out under the direction of the Board's architect, Mr. Harry Redfern.

The State Management Districts first came into existence in 1915 and shortly afterwards the Government took over, by State purchase, all breweries, hotels, public houses and other licensed premises (with a few exceptions) in three areas. These areas are: Carlisle; Gretna and the surrounding area; and the Cromarty Firth district. The intention was to control the liquor traffic in what were at the time important munition-making areas and a Naval base.

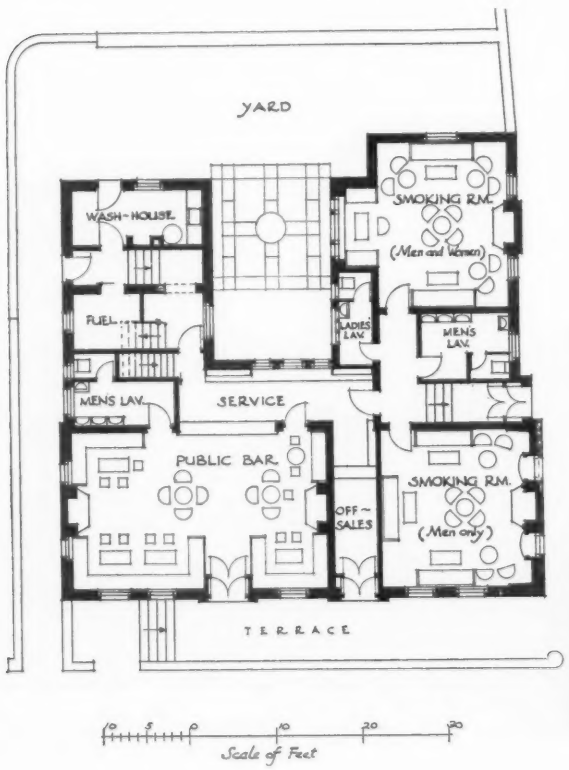
The control has continued since that time and has proved very successful. Of special interest to architects is the fact that new standards in public house design were set, which brewers have not been slow to follow. Indeed, Mr. Basil Oliver described the State-owned and

* *English Inns.* By Basil Oliver [*F.*]. R.I.B.A. JOURNAL, 14 May 1932.

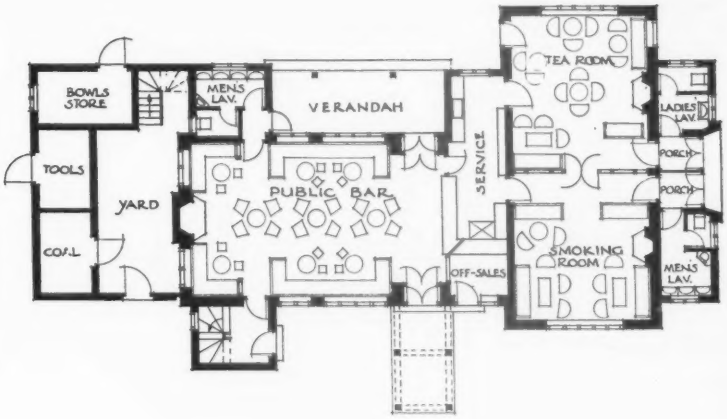
THE CUMBERLAND WRESTLERS, CARLISLE

Above: The Public Bar and Off-Sales entrances
Below: Ground Floor Plan

(All the plans in this article are reproduced to the same scale)



The Cumberland Wrestlers: Public Bar



THE MAGPIE INN, BOTCHERBY

Top right : Ground Floor Plan

Centre: The Tea Room is on the left, the Verandah in the centre, and the Bowls Store in the low wing on the right

Bottom : The Public Bar

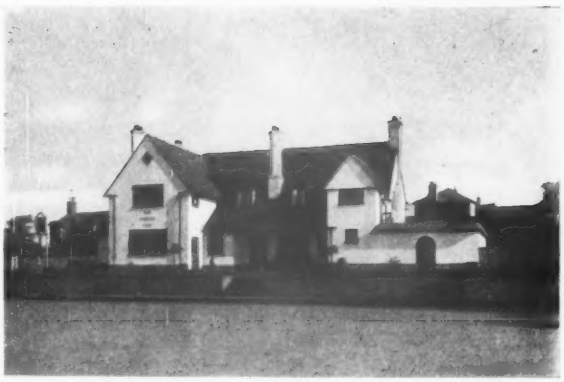
State-managed Carlisle district as " the Liquor Trade's National Experimental Station."

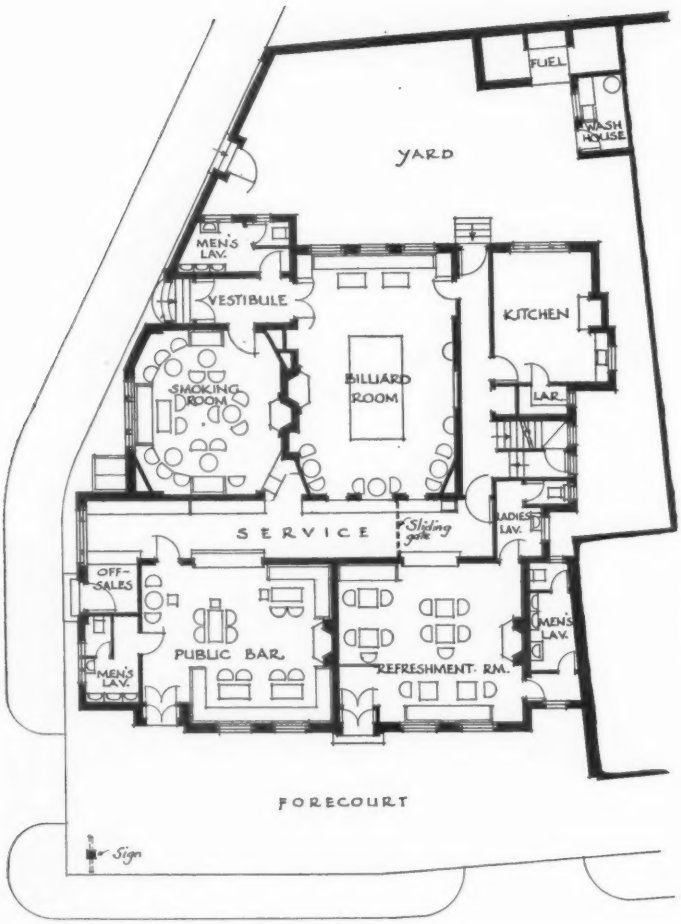
To younger architects, accustomed to fairly high standards of design in the newer inns about the country, the State Management designs will possibly not appear exceptional. But comparison should really be made with inns built by brewers immediately before the Great War, when the immense general improvement brought about by the example of the State Management inns will become obvious.

Even now many brewers could learn much from the recent work here illustrated, particularly as regards interiors. Many brewers are content to leave interior decoration in the hands of commercial firms, the result being often unpleasantly flashy. Exteriors also are often merely dull period reproductions or, worse still, an angular " moderne."

Inn design is subtle and difficult. No two houses present identical conditions ; locality, patronage and trade are peculiar to each case. Beyond these conditions the architect must create an exterior that is welcoming and an interior that is comfortable. Inn patrons are conservative and they like or dislike inns by instinct rather than by reasoned analysis. The interiors must be such as to become as unchangingly familiar as are the homes of the patrons. In this respect inn design differs somewhat from hotel design where the population is a changing one. The aim of the inn designer should be to attract the same people day after day.

The elements of this quality of familiar comfort cannot be found on the drawing board alone. They lie partly in the arrangement, sizes and shapes of interiors but also very much in the careful use of enduring materials that





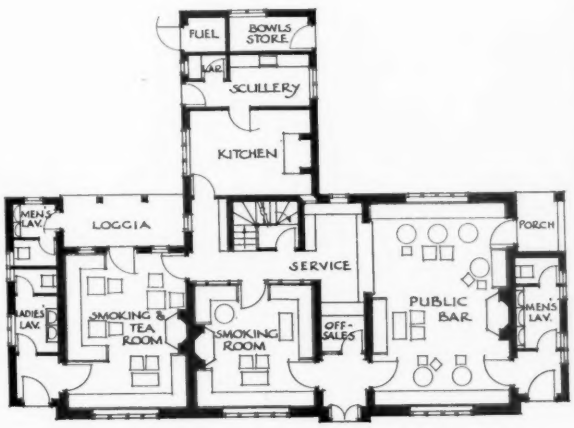
THE CROWN INN, STANWIX

Top left: The Smoking Room
Top right: From left to right the entrances are the Off-Sales, the Public Bar, and the Refreshment Room
Left: Ground Floor Plan

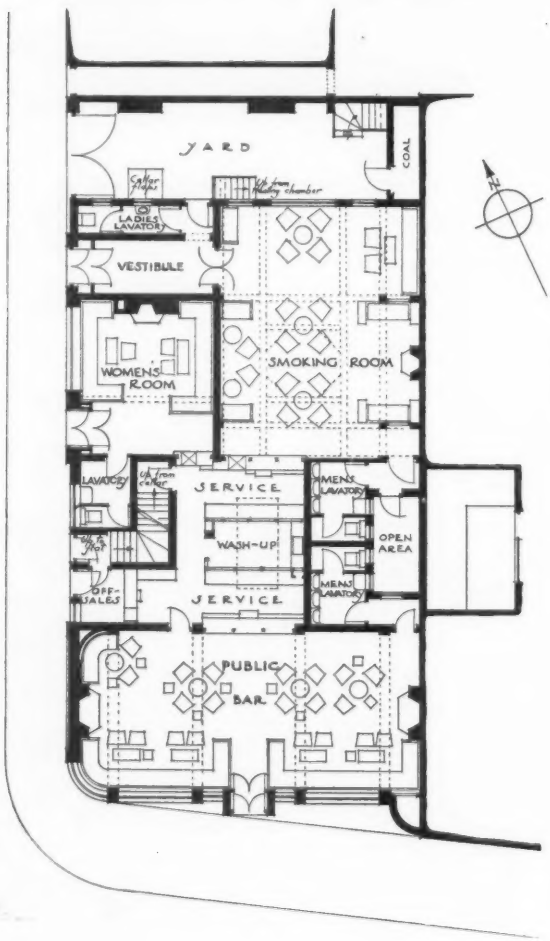
THE WHEATSHEAF INN, ABBEYTOWN

Above : From the main road

Below : Ground Floor Plan



Below : The Tea Room



will improve with age and cleaning. Indeed many proprietors of old inns that have acquired what might be termed a " patina of comfort " will not redecorate a room for fear they lose the atmosphere with which their patrons are familiar. In design the exceptional or unfamiliar must be avoided since patrons tend to be conservative. Design must not be in advance of current local ideas.

Much of the work of the State Management Districts consists in the reconditioning of existing inns. In such cases not only cannot the improvements be illustrated by photograph, but the architect may not even foresee the final result when work is started. Such work has to be carried out by stages and almost by instinct. As Mr. Howard Robertson has said, " the ideal is reached when, in the midst of the clutter of the work, the old customer remarks, ' I see you are freshening things up a bit.' "*

The foregoing remarks indicate the approach to their architectural problems, in both old and new buildings, of the State Management Districts. In consequence, traditional and familiar forms will be found repeated in the new buildings here illustrated. It is possible that different methods and more advanced design might be desirable in areas where the population is less conservatively minded than in northern Britain. Certainly they would need to be different in, for instance, a south-country seaside resort. Consequently, the " Carlisle " inns must be judged only in the light of their own peculiar requirements. Mere imitation of their design —as has often been done—would not necessarily be successful elsewhere. It should moreover be pointed out that no photographs or plans can portray at all faithfully the quality and atmosphere of these inns. They need to be studied on the spot.

The Report of the Royal Commission on Licensing summarises the aims of the State Management Districts Board in the following words : " The ideal towards which modern conceptions are tending is to make the public house, as it ought to be, a place where the public can obtain general refreshment, of whatever variety they choose, in decent, pleasant and comfortable surroundings." In quoting these words in his Paper, Mr. Basil Oliver referred to the social importance of this unique social experiment. For architects it is much more than this, since it calls for a careful study of human desires and needs—impossible to express in words—and a feeling for sensitive design in the highest degree ; it is in fact the essence of architecture.

* *Hotel Modernisation.* By Howard Robertson [*F.*]. R.I.B.A. JOURNAL, 19 December 1936.

THE EARL GREY, CARLISLE

Top left : The Public Bar
Bottom left : Ground Floor Plan

REVIEW OF CONSTRUCTION AND MATERIALS

This series is compiled from all sources contributing technical information of use to architects. These sources are principally the many research bodies, both official and industrial, individual experts and the R.I.B.A. Science and A.R.P. Committees. Every effort is made to ensure that the information given shall be as accurate and authoritative as possible. Questions are invited from readers on matters covered by this section; they should be addressed to the Technical Editor. The following are addresses and telephone numbers which are likely to be of use to those members seeking technical information. There are many other bodies dealing with specialised branches of research whose addresses can be obtained from the Technical Editor. We would remind readers that these bodies exist for the service of Architects and the Building Industry and are always pleased to answer enquiries.

The Director, The Building Research Station, Garston, Nr. Watford, Herts. Telegrams: "Research Phone Watford." Office hours: 9.30 to 5.30. Saturdays 9 to 12.30.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks. Telephone: Princes Risborough 101. Telegrams: "Timberlab Princes Risborough." Office hours, 9.15 to 5.30. Saturdays 9.15 to 12.

The Director, The British Standards Institution, 28 Victoria Street, London, S.W.1. Telephone: Victoria 3127 and 3128. Telegrams: "Standards Sowest London." Office hours, 9.30 to 5. Saturdays 9.30 to 12.30.

The Technical Manager, The Building Centre, Ltd., 158 New Bond Street, London, W.1. Telephone: Regent 2701, 2705. Office hours, 10 to 6. Saturdays 10 to 1.

The Chief Technical Officer, The Building Centre (Scotland) Ltd., 425-7 Sauchiehall Street, Glasgow, C.2. Telephone: Douglas 0372-0373. Office hours, 9.30 to 6. Saturdays 9.30 to 1.

STRUCTURAL PROBLEMS ATTENDING DOMESTIC HEATING WITH PARTICULAR REFERENCE TO THE USE OF HIGH EFFICIENCY STOVES AND COOKERS

By L. W. BURRIDGE, A.I.Struct.E.

It is a fact, well known to fuel technologists, that practically all types of fuel in common use contain a small but nevertheless appreciable proportion of sulphur compounds. So also do many forms of combustible domestic garbage which (often at the instigation of the stove and cooker manufacturers themselves) are disposed of in such stoves.

These sulphur compounds, when burnt, are converted into sulphur dioxide, the same gas as is produced as an insecticide (fumigator) when sulphur candles are burnt in a sealed room. Hence the effluent gases rising from the burning fuel contain not only soot and tarry matter, carbon dioxide (the oxidation product of the carbonaceous matter in the fuel) and water vapour (from the hydrogen compounds) but also a proportion of sulphur dioxide.

In the case of the normal open grate in domestic construction, these gases and fumes escaping up the flue are quite hot, so that, except for some of the heavier soot and tarry particles, no deposition takes place on the walls of the flue, and the carbon dioxide, water vapour and sulphur dioxide escape into the air. It is this content of sulphur dioxide which is responsible for that disfiguring disintegration of some types of building stone so frequently to be seen in large towns. Those interested in the general subject of atmospheric pollution are referred to the yearly "Reports of the Observations of the Atmospheric Pollution Committee" issued through the Department of Scientific and Industrial Research. To those unfamiliar with the mechanism of disintegration involved the following explanation may be of interest.

Sulphur dioxide is very soluble in water, and the resultant solution, sulphurous acid, is not only itself acidic but also easily undergoes further oxidation to produce a solution of that very destructive acid, sulphuric acid, with the aggressiveness of which everyone is familiar, when it is remembered that the older name for this acid is "oil of vitriol." Hence, under the close humid conditions which obtain in most towns during the winter months (i.e., the period when fuel consumption is at a maximum) the exterior surfaces of buildings are likely to be depositories for solutions of sulphurous and sulphuric acids. Should those surfaces contain materials which combine readily with these acids, then disintegration of the surface by chemical erosion may take place, especially of those areas of the surface not exposed to the cleansing action of rain. Two examples of common building materials susceptible to this form of chemical erosion are (i) the calcareous natural

stones such as limestones, especially if unduly porous, and (ii) ordinary cement mortars and renderings. Both these materials contain compounds of lime which are converted by the sulphurous pollution into calcium sulphate (the chemical name for the mineral gypsum from which many plasters are made).

Whilst the original mechanism is the same in both materials instanced, i.e., the formation of calcium sulphate, the subsequent action differs somewhat. In the case of the calcareous building stones, disintegration occurs as the result of the crystallisation of the rather insoluble calcium sulphate in the pores of the stone, which is thus disintegrated by crystallisation pressure, as occurs in frost action. This aspect of the subject has been very systematically investigated by various research workers, notably by the Building Research Station, and, for detailed information on the subject, the reader is referred to the excellent monograph on the subject by R. J. Schaffer, "The Weathering of Natural Building Stones," Building Research Special Report, No. 18 (H.M.S.O. 1932-33. 4s. 6d. net). Whilst it is impossible, within the scope of this article, to summarise this publication, and the further contributions on the subject since published in the annual reports of the Building Research Board, two broad recommendations arrived at will be of interest. Since, so far, the use of sulphur-free fuel is relatively uncommon (despite the effects of such organisations as the Smoke Abatement Society and the various commercial interests producing fuels of low sulphur content) we must face the fact that, at present, the atmosphere of densely populated towns inevitably contains an aggressive proportion of sulphurous gases. Hence, in such towns, only those varieties of calcareous natural stones should be used which tests have shown to be relatively resistant to attack. In this connection Schaffer and his co-workers (*loc. cit.*) have explored a wide range of British limestones, etc., and have established a simple method which assesses their durability. Having thereby selected a resistant stone, the second mode of defence recommended against the inevitable aggression is to augment the cleansing action of natural rain, by periodically washing down the stonework with ordinary water: alkalies, soaps or other soluble cleansing materials should on no account be used since they will, in all likelihood, introduce into the fabric appreciable proportions of other substances even more susceptible to sulphurous pollution than the original stone, the last state of which will be as unfortunate as that of the Biblical character from whom one devil was cast out only to leave room for other seven.

Turning now to the secondary mechanism of the attack of sulphurous fumes on ordinary cement mortars, whilst the first product of the aggression is, as before, calcium sulphate, the chemical action goes further, with the result that other ingredients of the cement are involved. As a result there is formed a complex crystalline material once aptly dubbed, by a famous cement technologist, the "cement bacillus." Known to cement chemists as calcium sulpho-aluminate, this "cement bacillus" forms bulky, heavily hydrated crystals, in the place of the more compact cement compounds which have been attacked. This increase of volume, of course, causes a marked expansion of mortar followed eventually by disintegration.

On normal exposures, however, instances of failure of cement mortars and renderings which can be definitely attributed to sulphurous pollution attack alone are very rare, since other and equally potent agencies, such as moisture movement, etc., are there operative which tend to mask the particular effect under consideration. Here again, however, two examples can be given, the second of which actually forms the subject of the succeeding portion of this note.

Where sulphurous pollution is extremely high, as, for example, in engine sheds, and the immediate vicinity of railway cuttings, tunnel openings and the like, instances have occurred of the failure of ordinary cement renderings and mortars of structures close enough to get the fumes direct. Such site conditions are relatively rare, however, and the informed architect and builder normally take appropriate measures to avoid the possibility of such an occurrence.

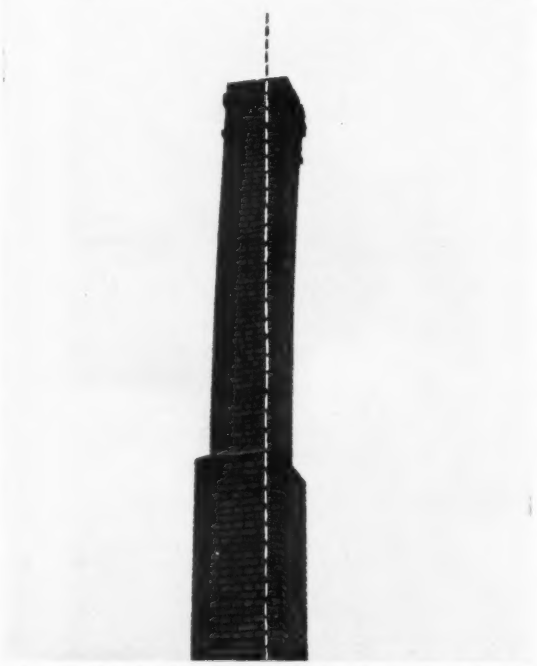
The second type of failure due to sulphurous pollution attack on ordinary cement mortars is, unfortunately, by no means so rare, and, more unfortunately still, is getting increasingly more common, because many builders, in adopting what are definitely contributions to more effective heating, have failed so to modify their constructional technique as to meet the requirements of their modern heating units. Whether such failure is to be attributed to a lack of appreciation of the problem involved, or to false economy in the face of such appreciation, is a moot point. Since, however, the writer is aware of numerous instances of this type of failure, in structures designed by competent architects and built by reputable builders, it is felt that they have arisen rather from a lack of appreciation of the problem than from false economy.

Let us therefore state the problem as it applies to modern high efficiency stoves and cookers and cement mortars, and suggest the most practicable way of handling the problem.

The high efficiency of the heating and cooking apparatus in question is attained by so designing the apparatus that the maximum amount of the total heat resulting from the combustion of the fuel is effectively employed in heating (or cooking). To this end, the design of the apparatus is such as extracts the optimum amount of heat not only from the fuel burnt but also from the hot gases resulting from the combustion. In so far as this latter object is realised, it follows that the temperature of those gases as they leave the apparatus

is much lower than obtains in the case of the open grate. As a result, the condensible components of those gases, being already at a relatively low temperature, will easily deposit on any zones of the flue which are especially cold. The introduction of domestic garbage with the fuel, or of "damping down" to depress the rate of burning, will obviously enhance this lowering of temperature and tendency to quick condensation.

Consider next the type of stack which most frequently shows visible signs of trouble, viz., the stack carried up that exterior wall of a structure which faces the prevailing bad weather. Obviously the weather faces of such a stack will get very cold, especially at the top, so that at that zone copious condensation of low temperature combustion fumes is encouraged. If, then, the stack has been laid up in cement mortar, which is a common vogue to-day (based upon an erroneous impression that such mortar gives stronger and more damptight work), then the conditions are all favourable to a sulphurous pollution failure, which in point of fact frequently occurs. The wet, relatively cool sulphurous fumes condense on the inner walls of the stack. Whilst without effect upon the bricks themselves, the condensed acidic liquid permeates the mortar to produce very marked "cement bacillus" expansion of the mortar joints. As a result the weather face of the stack grows and the stack finally leans over alarmingly towards the roof, and, if not noticed and remedied previously by the owner, is finally condemned as an unsafe structure by the local surveyor. The same phenomenon occurs, generally unnoticed, to a lesser extent in tall warehouse and similar buildings the upper parts of which are used as unheated store rooms, and the lower floors as offices and shops.



An example of twisted chimney, attributable to the action of condensed sulphurous fumes on mortar. (The dotted line shows the vertical)

What, then, is the remedy to be applied to existent structures showing this trouble and the constructional technique to be adopted in new construction to prevent its occurrence. In view of the fact that even the "compo" (cement-lime-sand) mortars which enlightened architects and builders now use in lieu of cement mortars are also liable (to a lesser extent) to sulphurous pollution attack, the solution in either case (existent or new construction) is the same, viz., the flue must be lined with an impervious material immune to acid attack. Of course, in the case of existent warped stacks these latter must be pulled down and a new, lined stack constructed. As a liner for stacks leading from high efficiency cooking apparatus one may use either the dense terra cotta or similar type of flue liners specially manufactured for such purposes or the ordinary salt-glazed ware pipes normally used for sewerage work. For obvious reasons it would be unwise to use piping made from cementitious materials or corrodible metals. The terra cotta or salt-glazed ware linings have the additional advantage of offering little lodgment for soot and tarry matter and their smooth surface facilitates sweeping. A corollary of this smooth surface must, however, be borne in mind, viz., that liquid deposits of tarry or moist matter, if they occur, will tend to drain down to the base of the flue, where, therefore, an easily cleaned trap for them should be introduced. Where it may be thought advisable to use a seal to the joints of piping so used, the traditional pargeting mortar of lime and cow dung is preferable. This mix is not, of course, initially proof to sulphurous fumes, but in time the lime is converted into gypsum, for the growth of which the compressible remnants of the organic matter leave ample space, and the joint is eventually plugged with an interlocking crystal cement consisting of calcium carbonate and gypsum. It is sometimes advised that an air space be left around the impervious flue lining as a thermal insulator. This recommendation is, in the writer's opinion, based on a misconception of the insulating value of air spaces. So long as air spaces are substantially sealed and not subject to convection or ventilation currents, they undoubtedly have a high thermal insulating effect. If, however, they are not virtually sealed their effectiveness as thermal insulators is questionable. Since, in normal methods of construction, such sealing is unlikely to be attained, complete filling in between the liner and the brickwork is considered preferable. Where the space to be filled is appreciable a 1 : 3 to 4 lime-crushed brick mix is suitable.

THE INSTITUTE'S APPEAL

The following is the sixth list of donations and increased subscriptions received up to 25 March in response to the appeal issued to all members and honorary members and students on 16 December 1938.

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Full particulars were published in the issue of the JOURNAL for 6 February, and can be obtained on application to the Secretary, R.I.B.A.

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O. S. Portsmouth [*F.*]	2	2	0
N. L. Reece [*A.*]	1	1	0
Hugh W. E. Ruffle [*L.*]	1	1	0
R. W. Schofield [*L.*]	1	1	0
S. E. Smale [*A.*]	1	1	0
J. D. Smith [*L.*]	5	5	0
J. Stuart [*F.*]	3	3	0
J. A. Tadman [*A.*]	1	1	0
Professor Ivor Tengbom [*H.C.M.*]	10	0	0
E. S. Underwood [*F.*]	2	2	0
E. Berry Webber [*A.*]	25	0	0
William J. Werry [*A.*]		17	0
Cecil W. L. Windle [*A.*]	1	1	0
R. S. Wilshere [*F.*]	5	5	0

DONATIONS FROM R.I.B.A. ALLIED SOCIETIES

Burnley District Society of Architects	40	0	0
Nottingham, Derby and Lincoln Architectural Society	15	0	0

West Yorkshire Society of Architects have voluntarily agreed to refund 10 per cent. of the annual contribution under Byelaw 74 for the current year.

Institute of Southern Rhodesian Architects have given a donation of £8 8s., and have voluntarily agreed to a reduction of the annual contribution under Byelaw 74 from one-third to one-quarter for the current year.

INCREASED SUBSCRIPTIONS

The following members and students have promised to increase their annual subscriptions by the amount and for the number of years inserted in brackets against the amount.

	£	s.	d.	
Miss E. B. Alexander [*A.*]	3	3	0	(3)
Harry Andrew [*F.*]	5	5	0	(3)
Anonymous [*Student*] double subscription for 3 years				
H. A. Beeston [*A.*]	3	3	0	(3)
Kenneth A. Begg [*A.*]	3	3	0	(5)
H. Colbeck [*F.*]	2	2	0	(5)
H. Courtenay Constantine [*F.*]	1	1	0	(5)
R. E. M. Coombes [*A.*]	1	1	0	(3)
G. Cowley [*Student*]		10	0	(5)
H. Creak [*Student*]	1	1	0	(3)
J. W. Davidson [*Student*]	1	1	0	(3)
Sydney E. Eaton [*L.*]	3	3	0	(3)
Gerald Evans [*L.*]	1	1	0	(3)
A. G. Frolich [*A.*]	2	18	0	(3)
D. Gilby [*Student*]		10	6	(5)
G. H. B. Gould [*A.*]	1	1	0	(10)
F. P. Harrison [*Student*] a year until further notice		10	6	
William Hirst [*A.*] a year until further notice	2	2	0	
F. J. Horth [*F.*]	5	5	0	(3)
Chas. J. Imossi [*L.*]	2	2	0	(10)
C. H. James [*F.*]	2	0	0	(7)
Frank L. Johnson [*L.*]	1	1	0	(4)
Charles Law [*Student*] a year until further notice		10	6	
Alister G. MacDonald [*F.*]	1	0	0	(10)
S. A. H. Mackey [*A.*]	1	1	0	(5)
F. Marston [*A.*]		10	6	(5)
S. B. Marston [*Student*] a year until further notice		10	6	
W. G. Moffat [*F.*] a year until further notice	2	2	0	
S. Rowland Pierce [*F.*]	2	0	0	(7)
F. Potter [*A.*]	1	1	0	(5)
Ivan A. Stark [*Student*]	1	1	0	(3)
Horace W. Stokes [*A.*]	1	1	0	(4)
Miss Elsbeth F. Stronach [*Student*]	1	1	0	(3)
U On Than [*A.*]	1	1	0	(5)
W. G. Watkins [*F.*]	1	1	0	(3)
Edwin Watson [*A.*]	1	1	0	(4)
Frank A. Weemys [*Student*]		10	6	(3)
H. F. Wilson [*Student*] a year until further notice		9	0	

The donations and increased subscriptions or contributions received and promised up to 25 March represent a total of £5,651 5s. 9d. This amount does not include increase of subscriptions or contributions promised for which no definite period is stated.

THE EFFECTS OF SPECIALISATION IN ARCHITECTURAL PRACTICE

THE INFORMAL GENERAL MEETING ON 15 MARCH

Either because publicity had been better organised or because the subject was one of interest to a larger number of members than usual or for both reasons there was a full house for the discussion on specialisation.

The four speakers who opened the discussion, each from a different point of view, made contributions that were neither co-ordinated nor opposed; as a result the proceedings rather lacked direction and the speakers, although not opposed, were continually at cross purposes.

Mr. T. P. Bennett confessed that his special line of practice was one that he had wanted to follow since he was fourteen, which just shows what can be achieved by foresight and persistence! Otherwise he cleared the field by defining all the various kinds of specialisation and suggesting reasons why specialisation of some sort is generally inevitable. Personal likings or abilities, the pressure of time which did not allow architects to know everything, pressure from clients who wanted jobs completed the day before yesterday which premiated the man who knew the ground-work of a special kind of work, and the element of mere chance which sometimes drove men to specialise against their will in a type of building in which they had had one outstanding success.

Some of Mr. Bennett's most stimulating remarks were in praise of the non-specialist who could bring a brain unhampered by pre-conceptions. The finest solution did not necessarily come from the man who knew most. Specialisation tended to make everything alike, difference was good. He was against the type of specialisation that kept one man all his time at one limited job such as designing door-knobs.

Mr. E. A. A. Rowse, Head of the School of Planning and Research, criticised Mr. Bennett's "intense concentration which leaves out the things which muddle" but are no less important than the details. He asked "what was the architect's job?"—absorption with matters of style, with 6 per cent., with the special, even anti-social, needs of the individual? The architect was concerned with *needs* in the widest sense, he had to discover what not merely the client's needs were but the communities needs, he had to correct the faults of environment. This was architecture. We shirked burdens by limiting our responsibilities. The R.I.B.A. had looked at architecture in too narrow a way; to produce good buildings was not everything. A new architectural mind capable of seeing over a wide range was needed, a comprehensive mind capable of collaborating with similar minds in other fields to produce a "collective brain." We did not know the public.

If Mr. Rowse's remarks were interpreted by some as being against specialisation, others could take them as Mr. Bennett took them—"the man who is trying to plan the whole of England is the hell of a specialist."

Mr. Cadbury-Brown said that architects by the very fact that they were architects and not politicians were essentially specialists, nevertheless specialisation could be a deadening thing; in the specialist's office architecture was in danger of being submerged by organisation; jobs were adapted to the organisation, whereas the intelligent non-specialist was always trying to adapt himself to his problem, to get closer to his clients. Also specialists were apt to be blinded by experience.

Finally, Mr. Basil Ward in his turn asked what specialisation meant: an architect designs buildings of one kind and is a "specialist," but this was not specialisation, but merely making the best of a bad job, the bad job being the place of the architect in the world and the state of the world itself. Architects spent their time expressing their own immortal souls. Mr. Ward quoted Maynard Keynes and R. H. Tawney to show how nasty the world was and point various morals concerning the degeneracy of architects and society. Specialisation had come to far too easy terms with the business and industrial world.

There had been little specialisation in great periods and was little now in countries such as Sweden where architecture was healthy.

The discussion consisted of three contributions. Mr. Magnay suggested that we were necessarily so much on top of ourselves that it was difficult to understand our own problems: by examples from the teaching profession he sought to show that specialisation was bad—nevertheless some specialisation was inevitable but there had to be co-operation between the units inside the profession and the profession and the world outside.

Next Mr. Maxwell Fry said why he did not like specialisation and suggested, as others had suggested, that specialisation was a symptom merely of an all-round rotten state of things, but Mr. Fry was encouraging. Finally, another speaker told a funny story to show that the client's constant search for specialists sometimes resulted in his running his nose against a wall. Then Mr. Bennett summed up, or rather he balanced evolution and revolution and decided for the former.

It was a good meeting despite the failure to get to grips with the subject in any very coherent way.

FRANK LLOYD WRIGHT'S LECTURES

On 2, 4, 9 and 11 May Mr. Frank Lloyd Wright will give his Sulgrave Manor Board Lectures at the R.I.B.A. The Secretary of the Board has just been notified that Mr. Frank Lloyd Wright has changed the titles of the lectures to "An Organic Architecture: The Architecture of Democracy." The particular titles of the four lectures will be: 1. "The Philosophy of that Architecture." 2. "Its Social Implications." 3. "The Practical Application to Date." 4. "Exemplars and Technique." The revised titles are more exciting than those first announced. Those who are certain to be able to come to the lectures are advised to write for a reserved ticket to the Secretary of the Sulgrave Manor Board, 37 Charles Street, W.1. A good number of seats will be kept unreserved. The first lecture on 2 May is at *5.30 p.m.*, the others are at 8.30 p.m.

Book Reviews

MODERN SWISS ARCHITECTURE AND BRIDGES

MODERN SWISS ARCHITECTURE. *No. 1. Edited by Birchler, Giedion, Jegher, Meyer, Schmidt and Scheiff. To be published in ten numbers. Total 640 pp. German, French and English texts. Basel: Karl Werner. 1939. 59 Swiss Francs.*

Some people think that modern architecture is international. Some people think that Switzerland is international, but that is another matter. Modern architecture is no more and no less international than any of the old styles. The Gothic idea was European, so was the Renaissance idea, so is the Modern idea (loathsome phrase, but styles never get a real name till they are dead). Each has extended farther than the last because European culture has extended, till it is now in effect world wide.

But can we not distinguish the same national differences to-day that Banister Fletcher or Baedecker or our own fine perceptions have distinguished among the older buildings? Some say that we cannot, that the new office block in Rio, the new office block in Marseilles and the new office block in Hongkong are as like as three pins. It was all right in the old days when there was a bit of ornament, you could look out of the porthole in the morning and you knew where you were. Now you have to ask the steward.

Of course, modern architecture is not a style at all. It's an approach, the scientific approach, so naturally all buildings fulfilling the same functions will look alike except for minor variations due to climate.

Nevertheless, there is something unmistakably Swiss about most of the works illustrated in this book. Their design is clean and sweet, and they are built with the precision of a watchmaker. They have a light touch, but for the most part little grace. Maillart's bridge is a magnificent exception.

Their virtues are those of a sober middle class, lacking perhaps the robust humanity of the lower orders or the refined humanism of the upper. Their achievement is a vindication of the creative strength of a liberal democracy. We should find it difficult to compile such a collection of English examples.

Architectural sobriety may be necessary where Nature is so intoxicated, but the house by Moser shows that a certain amount of genuine romanticism did remain when Le Corbusier went to Paris. More typical are the offices and factory by Salvisberg and the houses by Steiger, by Senn and by Fischli, all excellent buildings. Perhaps the characteristic strong eaves and long openings are not entirely functional. In a land of mountains and pine trunks there is a special virtue in them. Switzerland is one of the few countries to go in for modern churches, and there is a good example here by Mezger.

Altogether there are twenty examples, built within the last ten years, generally illustrated by two or three first-rate photographs and a typical plan and section. The notes on planning, construction and cost are in English and French, as well as German, and costs are in English currency. But the titles of the buildings have not been translated, nor have the notes in the plans and sections. This is a pity, especially where the structural information is of such value. It would have been better to substitute numbers on the drawings and a tri-lingual table of reference alongside. The English translation has been done chiefly by A. J. Dakin, and it is good, but it needs a final polish.

The book is only the first of ten parts to be issued at intervals. Unfortunately we are not told what intervals. The complete work will consist of 640 pages sub-divided under five heads: Work, Transport, Dwelling, Physical Recreation, and Spiritual Recreation (Education and Entertainment). Each number issued will have examples of all five classes. The separate parts are in portfolios, but covers and indices will be sent out with the last number, and a temporary filing cover with the fourth. Presumably this system of publication has financial advantages, but it is rather a nuisance for the purchaser, living in a world of goods down and payment by instalments. However, the *Wonders of the Universe* still appears in not less than twenty fortnightly parts, so why not the wonders of Swiss architecture?

It's good value too, whether you want it to show your client the sort of thing you are getting at (and after all he won't go all the way to Switzerland), or whether you want to remind yourself from time to time how that Swiss fellow did it, or whether you merely want spiritual recreation (education and entertainment).

G. S.

BRIDGES TO DREAM OF

VERSUCHE UND ERFAHRUNGEN AN AUSGEFÜHRTEN EISENBETON-BAUWERKEN IN DER SCHWEIZ. *By Prof. Dr. Ing. h.c. M. Ros. Zurich. 1937.*

This important volume on the experiments and experience in building reinforced concrete bridges in Switzerland which the library has just received is Report No. 99 of the Association for Testing Industrial Materials and Preparations of Zurich and is issued as a supplement to the 26th annual report of the Society of Swiss Cement, Chalk and Gypsum Manufacturers.

For architects, who cannot be expected to follow fully the intricate details of calculations, the value of the book lies in the large number of superb photographs and the accom-

panying facts enlarging our knowledge of these bridges, probably the most famous group of bridges anywhere in the world. Maillart has long been a hero to every English modern architect and the recent article in the R.I.B.A. JOURNAL on his work was our testimony to his pre-eminence. There are many of his bridges illustrated here, including most of the best known, but the value of the book is partly, however, that it will help us to widen our appreciation of the work of this country of engineers by drawing attention to the work of some other designers.

Among the outstanding examples are Sarrasin's arch bridges over the Trient-Schlucht near Gueuroz and the Visp at Stalden. Of a very different type, more urbane, is Guimini and Winawer's Kornhaus bridge at Zurich and the sturdy Roman conventionality of Hennings and Studer's stone-faced bridge over the Landwasser. Among the most astonishing is Züblin et Cie's 100 metre span arch over the Plessur near Langwies, built in 1914.

The illustrations in this book will increase our admiration and excite some of us to despair that our bridge building in Great Britain should not yet have got beyond the adolescent galumphing stage.

SOME ANTIQUARIAN AND ARCHÆOLOGICAL BOOKS

NORTH ENGLAND

THE THREE NORTHERN COUNTIES OF ENGLAND: *being some account of the people, their country and their history. Edited by Sir Cuthbert Headlam, Bart. 4to. xii + 346 pp. + 28 plates and maps. Gateshead-upon-Tyne: Northumberland Press. 1939. 6s.*

It is curious that the records of Northern England have not until now contained any historical, social and economic survey of the counties of Northumberland, Durham and Cumberland considered together, for there are few people with first-hand knowledge of the area, however slight or one-sided, who will not admit that these three counties form a unit based, as Lord Eustace Percy points out in his Introduction, upon "a common history, common economic problems and common institutions." This book by the variety of subjects which it covers will be of interest to layman and specialist alike, for it presents a true picture and a comprehensive account of the Northern Province from every standpoint of its long history and its present needs. The editor has gathered together a series of articles written by recognised authorities on such diverse subjects as Folklore, Place Names, Ancient Rome and Northern England, Architecture, Agriculture, Coal Mining, Shipbuilding, Geology, Birds and Flora.

The sections on the Roman Occupation and Ecclesiastical and Military Architecture will be of greatest interest to architects, and although these cover but 40 pages of the whole volume they are supplemented by an Appendix consisting of some interesting notes on Northern Churches and Castles, and by a bibliography which will be valuable to those who seek a more comprehensive knowledge of the subject.

The author of the article on Ecclesiastical and Military Architecture points out the reasons for local differences in building methods and traditions throughout the long and chequered history of the three counties. Then follows an interesting and informative account of the growth of Church Architecture from the last shrines of Paganism to present day churches, and shorter sections on fortified dwellings, comprising castles and the peel towers and bastles with which every visitor to the North to-day is familiar. These sections contain some interesting photographs of the lesser known religious buildings and castles, while the chapter on the Roman Occupation is illustrated by explanatory sketches of various military features, although it must be admitted that the technique of these sketches is hardly worthy of the excellent article which they illustrate.

It is greatly to be regretted that so valuable a record of architectural development should conclude abruptly after a survey of ecclesiastical and mediæval secular work, and that it should not be carried further to the great periods of building activity during the 18th and 19th centuries, including the architectural achievements of John Dobson and Richard Grainger and that of Vanbrugh at Seaton Delaval. In a work of this kind, however, there cannot fail to be omissions, and criticisms because of them will doubtless be made by others as habitually selfish as are architects, nevertheless the sponsors of this publication are to be congratulated on an achievement of no mean order—the achievement of a cross section through the growth of our heritage in all its aspects towards what may well prove to be a new dawn of prosperity for the Three Northern Counties of England.

W. B. EDWARDS [*F.*]

TIMBER ROOFS IN CHESHIRE CHURCHES

TIMBER ROOFS IN CHESHIRE CHURCHES. *By F. H. Crossley, F.S.A., in Transactions of Lancashire and Cheshire Antiquarian Society, 1937.*

To-day even in churches, that is to say, modern churches, one has to be satisfied with simplicity, if not actual baldness, in the roofs and it is therefore refreshing, indeed almost exciting, to renew one's acquaintance with the beautiful timber roofs of the Middle Ages.

Mr. Crossley is an experienced writer on timber work and has made his essay more interesting by explaining the history and construction of the roofs which are illustrated by excellent photographs.

These Cheshire churches are not very large, with one or two exceptions, and I do not think very well known, but they are exceedingly fine timber roofs and thanks are due to Mr. Crossley for reminding us of them. No doubt many people will visit some of the churches when an opportunity arises as a result of his articles.

Astbury is a wonderful church, and Gawsworth—at both these churches there is much besides the roofs.

It is very interesting to read of the Holmes Chapel roof—covered up for many years with plaster—now carefully uncovered and skilfully restored. It has made a somewhat dull building attractive.

Lower Peover with its oak piers is little known outside Cheshire—in spite of restoration it is most delightful.

Mr. Crossley's notes on each church are of necessity only brief. People interested must tour Cheshire.

BUILDING METHODS IN ANCIENT EGYPT

EGYPTIAN ARCHITECTURE. *By Flinders Petrie. xii + 95 pp. + 34 plates + 155 figures. London: British School of Archæology in Egypt, University College, and Quaritch. 1938. 7s. 6d.*

In the early part of this book Sir Flinders Petrie does for the traditional building materials and methods of Egypt what Clough Williams Ellis did, on a minuter scale and at a remove of over fifty centuries, for some of the traditional building materials and methods of England in his excellent little book *Cottage Building in Cob, Pisé, Chalk and Clay.*

Sir Flinders, on his first page, has a fling at one type of art historian. He warns him, and reminds us, what architecture should stand for. "Those," he says, "who would look on architecture as purely artistic, like painting, must remember the motto of the British architects, where *Usui Civium* comes before *Decori Urbium.*"

The description of the materials, tools, and methods of building cannot be too highly praised. Much of it will be new to most readers, and all of it is lucid, briefly put and absorbingly interesting.

Among many old theories on which new light is thrown the author discusses the well-known one (strongly advocated by Choisy) that rocking cradles were used to raise heavy blocks of stone. He shows in detail (page 40) not only how such enormous weights were raised but also how the gigantic obelisks and colossi were erected.

The author, beginning with an account of the development of brickwork, throws a fresh sidelight on the making of "bricks without straw," and gives ancient and modern illustrations to show that bricks are still being made as they were in Biblical and earlier days.

That the recessed wall construction in wooden houses of prehistoric times survives in the decorative channelings of later brickwork walls will be a new theory to most architects. Yet it should not cause surprise, for we have the familiar analogy of timber structure surviving as carved decoration in the marble of the Greek temple. Egypt rivals China as the home of such survivals, and the author is able to give many instances of a still greater age, in which the pliant papyrus and the bundle of reeds of primitive structures appear in later times as carved embellishments of an imperishable and truly monumental architecture.

When all is said, however, there still remain many of the old problems. How were conducted the *final* stages of the lowering of a great perpendicular stone mass accurately and safely on to its base? What method was used to spread the paper-thin bed of mortar over a floor-like width of wall? Sir Flinders has answers to many of these old problems, but to accept them entails the acceptance still of the old belief that the ancient Egyptians were supermen in the craft of building, as in the art and science of architecture. It is not surprising that Egypt could claim to be the site of two out of the Seven Wonders of the World.

One of the strikingly modern designs shown in the illustrations appears on plate 77. Here the recently recovered ruins of the architecture of Zeser at Saqqara are shown restored —with slender, widely spaced, fluted columns in a scheme evolved as early as the third dynasty. Yet this might have been, by all appearances, the prototype of some 20th century Swedish structure.

It may seem captious to criticise a book which is so extraordinarily interesting, highly readable, and obviously reliable. Yet it should be noted that many of the photographs are difficult to identify as a result of their indistinct numbering. The lack of order in this numbering is also, at first, a time-wasting factor. One finds a numerical list of drawings, with their page numbers and the approximate date of the subject, together with a list of plates, on page ix. A prefatory note explaining the system would have been a help. The size and style of the lettering used on the illustrations is often small and cramped to the point of being almost impossible to read.

The above criticisms apply to illustrations only. In spite of them, the author can fairly be said to have achieved the object with which he set out. ARNOLD SILCOCK [*F.*]

CRETAN ARCHÆOLOGY

THE ARCHÆOLOGY OF CRETE, AN INTRODUCTION. *By J. D. S-Pendlebury. 8vo. xxix + 400 pp. + 43 pl., 53 text illustrations, and 24 maps. 30s.*

A survey of the results of archæological research in Crete from the neolithic to the Roman period. Anyone who knows how much has been written about Crete, and how controversial and difficult some of the questions are, will realise that the words "survey" and "introduction" are modest titles for the feat which Mr. Pendlebury has performed. Sir Arthur Evans' *Palace of Minos* is and will continue to be the fountain-head of Cretan studies, but its cost is in proportion to its copiousness, and, moreover, being issued (in praiseworthy fashion) while the excavations were in progress, it cannot refer forward but only back; and though it now has the benefit of an exhaustive index, it will never be an easy book for the general reader. So there was room for such a book as this, and no one is better qualified than Mr. Pendlebury to produce it. Apart from his present specialisation in the Cretan field, his previous experience in those of Egyptian and of Hellenic archæology guarantees not only the breadth of his view but also the depth of his judgment. He has, as he says, tried to keep fact and theory apart—valuable distinction in country where Fancy has sometimes taken the bit between her teeth. The plan of the book is excellent. First comes a topographical survey based on prolonged first-hand acquaintance with the island and with almost every known ancient site in it. Topography must be at the root of every comprehensive study, and his maps of the island at successive periods are illuminating: he possesses, indeed, a gift for making clear the characteristics of the various phases of culture, and so justifying what may sometimes seem to the layman rather arbitrary divisions. The periods into which the pre-Hellenic, so-called Minoan, civilisation of Crete have been divided, as a result mainly of Evans' discoveries at Knossos, are then critically described one by one, the archæological evidence of every kind from every source being carefully analysed, and this section is rounded off with a conspectus of Minoan civilisation as a whole. Finally a chapter is devoted to the subsequent history of culture in Crete down to the Roman age. Although these later periods are, naturally enough, more briefly treated than the Minoan, it is most useful to have them treated at all.

For the rest, the argument is documented throughout with illustrations of the archæological material, there are some useful plates of the patterns on pottery at different times, and the book is particularly rich in plans of houses and of tombs, which will commend it to architects; and not only to them. There are also numerous small but good views of Cretan landscape and seascape, a useful selection of pictures of objects, again small, but clear, and a select bibliography.

B. A.

DEWPONDS

DEWPONDS IN FABLE AND FACT. *By Alfred J. Pugsley, M.A., B.Sc. Sm. 8vo. x + 62 pp. + 8 pl. London: Country Life, 1939. 3s. 6d.*

The design of dewponds is more than an archæological study: in many parts of England a dewpond gives the cheapest and surest water supply—if it is well and properly made—hence the value, as apart from the interest, of this delightful book.

Mr. Pugsley writes well and too modestly when he says that there is not much reason for the publication of his book as it is, he suggests, another nail, merely, in the coffin of an already dead idea that won't lie down. The dead idea being, of course, the myth that dewponds are fed by dew. He has some vigorous complaints in particular against the "special pleading of a highly conjectural archæological nature" that has deluded people into accepting entirely false ideas, the chief culprits being Messrs. A. J. & G. Hubbard, whose book on *Neolithic Dewponds and Cattleways* has gained a reputation which, if Mr. Pugsley is right, it certainly does not deserve.

Dewponds, according to all careful research, are fed mainly by rain with some contributions from surface drainage. The "secret" methods that romantic antiquaries associate with the construction of ponds are nothing more than the traditional craftsmanship involved in making an impermeable clay bottom. First-class impervious cement does as well. The book gives examples of modern ponds and the names and addresses of some pond makers still in business. It is well illustrated by diagrams and photographs.

A HISTORY OF GRAVESTONES

HISTORY OF CEMETERY SCULPTURE. *By Arnold Whittick. Volume I: From the Monuments of Primitive Times and of the Oldest Civilisations to Early Christian Monuments in England. La. 4o. 120 pp. + 51 plates (Limited edition). London: Mineral Publications, Ltd., 1938.*

With the minor reservation that the title is not properly descriptive of the contents, a work on this subject can be welcomed; there is some scope for original research and it is valuable, for comparative purposes, to get the material of successive periods in this particular branch of craftsmanship into reasonable compass. Mr. Whittick states at the outset that his aim has been to write a history of the subject, confining his attention to monuments of "modest dimensions." Even so, it is obvious that a work of the present compass could only be an introduction to an enquiry that would run into several volumes, if treated comprehensively. The comparative meagreness of the treatment in certain directions is apparent from the facts that Etruscan examples are dismissed in four pages of text, with three plates representing stelæ only, and that there is no chapter on the Hellenistic period, so that the important groups of the recumbent effigy type and of the chest type with sculptured panels are not represented at all. There is no mention of Visigothic work in Spain, or of the important Moslem contribution in the Near East.

The two general chapters are: I—The Origin and Psychology of the Grave Monument, and IX—The Genesis of the Churchyard. The remaining thirteen chapters deal successively with the following phases: Primitive, Egyptian, Greek, Etruscan, Roman, Early Christian, and Coptic, the last four being devoted to Christian Britain. The consistent dating of the monuments is a good feature of the book. English and Irish crosses are dealt with well; the Scottish ones hardly so well, and it is surprising that there are only four brief references to Iona and no illustrations of the famous cross. The very meagre treatment of Byzantine influence (p. 66) is also surprising. It is hardly consistent to dismiss the Greek motives mentioned in the last paragraph of p. 22; at least sketches might have been given. An illustration of a Mycenæan stele is another important omission, and Perrot and Chipiez's volume dealing with these might have been mentioned in the Bibliography, which also omits Flinders Petrie's book referred to in footnote 1 on page 13. There are loose statements here and there, as at the beginning of Chapter XI—"Christianity reached Ireland . . . long before the advent of St. Patrick"; and some careless writing—"In a history of this kind a good deal depends on the illustrations." (Preface): "Cremation seems to have largely obtained." (p. 63). Generally speaking, however, it can be said that the book will certainly be a useful work of reference of an introductory kind.

THEODORE FYFE [*F.*]

Accessions to the Library

1938-1939—IX

Lists of all books, pamphlets, drawings and photographs presented to or purchased by the Library are published periodically. It is suggested that members who wish to be in close touch with the development of the Library should make a point of retaining these lists of reference.

Any notes which appear in the lists are published without prejudice to a further and more detailed criticism.

Books presented by publishers for review marked R.

Books purchased marked P.

* *Books of which there is at least one copy in the Loan Library*

ARCHITECTURE

SVENSKA ARKITEKTERS RIKSFÖRBUND

Arsbok med matrikel. (Pubn. No. 6.)

1938. R.

R.I.B.A. × (076)

[Testimonies of study.] Revised syllabus for the R.I.B.A. Intermediate Examination t— of s— . . . 1940.

leaflet. 10″. Lond. 1938.

With circular, dupl. typescript, *attached.*

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[List of books formerly belonging to J— M—. Transcripts of title-pages.]

typescript. 13¾″. [19—.]

Presented by Prof. Percy Nobbs, M.A. [*F.*].

HISTORY

72.036.6 (44) : 92L + J

LE CORBUSIER, *pseud., and* JEANNERET (PIERRE)

*Œuvre complète 1934-1938.

1939. £1. P. *for Loan Library.*

BUILDING TYPES
(CIVIL)

MESSENT (C. J. W.) 725.348 (42.61)
The Old water mills of Norfolk.
11″. 64 pp. Norwich : Fletcher & Son. 1939. 6s. R.

725.512 (485 S)
STOCKHOLM : RADIUMHEMMET, RADIOPATOLOGISKA INSTITUTIONEN *and* RADIOFYSISKA I—
Konung Gustaf V : s Jubileumsklinik i Stockholm *etc.* [By G. Forssel and others.]
9½″. 48 pp. + pls. Stockholm. [1938.]
Presented by Mr. E. L. Bird [A.].

ARCHITECTS' JOURNAL 725.716
*[Special number :] Public houses. (24 Nov.)
12″. Lond. 1938. 6d. P. *for Loan Library.*

ARCHITECTURE D'AUJOURD'HUI, *journal* 725.82
*[Special number :] Le Spectacle. [Theatres, &c.] (Sept.)
12¼″. Boulogne. 1938. (4s.) P. *for Loan Library.*

ARCHITECTURAL FORUM 725.822
*[Special] reference number : Theaters. (June.)
11¼″. N. York. 1925. (2s. 6d.) P. *for Loan Library.*
From broken-up volume xlii.

(RELIGIOUS)

ARCHITECTURE D'AUJOURD'HUI 726
*[Special number :] Architecture religieuse. (July.)
12″. Boulogne. 1938. (2s. 10d.) P. *for Loan Library.*

TRAQUAIR (RAMSAY) 726.5 (71)
The Church of St. John the Baptist, St. Jean Port Joli, Que. (McGill University Pubns., series xiii (Art and Architecture), No. 41.)
pam. 12¼″. Montreal. 1939.
Presented by the Author, M.A.(HON.) [*F.*].

726.71 (42.13) : 726.697.2
OFFICE OF WORKS : DEPARTMENT OF ANCIENT MONUMENTS AND HISTORIC BUILDINGS
Official guides :
Chapter House and Pyx Chamber, Westminster Abbey. By J. G. Noppen.
pam. 8½″. Lond. : H.M.S.O. 1935. 6d.
Presented by Mr. G. J. B. Fox.

(EDUCATIONAL)

ARCHITECTURAL FORUM 727.8
*[Special] reference number : Small libraries. (Apl.)
11¼″. N. York. 1925. (2s. 6d.) *Loan Library.*
From broken-up volume xlii.

(DOMESTIC)

TIMBER DEVELOPMENT ASSOCIATION 728 : 694.1
*Timber houses. Their uses, advantages and construction.
Reprint. pam. 7¼″. Lond. 1937 (1938). R.
To Loan Library.

Inf. file 728.1 (485 S)
UNITED STATES : DEPARTMENT OF COMMERCE—BUREAU OF FOREIGN AND DOMESTIC COMMERCE
The Small-housing scheme of the City of Stockholm.
pam. 9¼″. Washington. 1935. R.
Another copy, with 3 Ph. prints inserted.

Inf. file 728.1 (485 G)
GÖTEBORG (GOTHENBURG), *Sweden, City of* : DRÄTSELKAMMARE [FINANCE DEPT.]
Småstugor [small cottages].
pam. 8″×7¼″. [Göteborg.] 1938. R.

MARTIN (J. L.) *and* SPEIGHT (S.) 728.2 : 729.9
*The Flat book.
8½″. 200 pp. Lond. : Heinemann. 1939. 5s. R. & P.

ARCHITECTURAL FORUM 728.4
*[Special] reference number : Golf and country clubs. (Mar.)
11¼″. New York. 1925. *Loan Library.*
From broken-up volume xlii.

R.I.B.A. 728.86 : 69.071.5
*The Architect and housing by the speculative builder. Articles [i—] iv—ix. By T. Alwyn Lloyd and others. (*From* Journal 24 Feb. 1934—21 Mar. 1938.)
11″. Lond. 1934-38. *To Loan Library.*

ALLIED ARTS

WELLS (P. A.) *and* HOOPER (JOHN) 749 : 684
Modern cabinet work, furniture & fitments. *Etc.*
5th ed. 10¼″. xii + 390 pp. + lv pls. (backed).
Lond. : Batsford. 1938. £1 5s. R.

BUILDING SCIENCE
VOCATION

LUCAS (EDGAR) 69.07
*Building as a career.
7¼″. xii + 115 pp. Lond. : Pitman. 1939. 3s. 6d. R. & P.

CONSTRUCTION

ROS (M.) 693.55 (494)
Versuche und erfahrungen an ausgeführten eisenbeton-bauwerken in der Schweiz. (Zürich : Eidgenössische Materialprüfungs- und Versuchsanstalt für Industrie, Bauwesen und Gewerbe.) (Bericht No. 99.) (Beilage zum xxvi. Jahresbericht des Vereins Schweizerische Zement-, Kalk- und Gips-Fabrikanten.)
12½″. (ii) + xiv + 407 pp. [Zürich.] 1937. R
Épreuves et expériences . . . , *French summary, inserted.*

PROOFING

HOME OFFICE 699.895
Air raid shelter policy. Report *etc.* (Cmd. 5932.)
pam. 9¾″. Lond. : H.M.S.O. 1939. 2d. R.

699.895 : 69.059.2
GREAT BRITAIN : PARLIAMENT—COMMITTEES. COMMITTEE ON THE RESPONSIBILITY FOR THE REPAIR OF PREMISES DAMAGED BY HOSTILITIES
Report *etc.* (Cmd. 5934.)
pam. 9¾″. Lond. : H.M.S.O. 1939. 6d. R.

699.895 : 725.511
MINISTRY OF HEALTH *and* SCOTLAND : DEPARTMENT FOR HEALTH
Emergency medical services. Memoranda :
No. 1. Structural and other precautions against air raid risks in hospitals.
1939. 3d.
No. 2. Emergency hospital organisation. [Including structural precautions.]
1939. 6d.
—pams. 8½″. Lond. : H.M.S.O. 193—. R.

TOWN AND COUNTRY PLANNING, RURAL PRESERVATION

MINISTRY OF HEALTH 711.111.5 : 333
Town and country planning. Assistance of Valuation Office of Board of Inland Revenue. (T. & C.P. 134 (revised).)
9¾″. Lond. 1939. R.
With [Circular] (T. & C.P. 15), *leaflet, attached.*

Inf. file 711.417 (485 S)
SWEDEN : SOCIAL DEPARTMENT *and* STOCKHOLM : REAL ESTATE DEPARTMENT
Garden cities in Stockholm.
pam. 6″. [Stockholm. 193—.] R.

POLITICAL AND ECONOMIC PLANNING 711.454
Report on the location of industry. *Etc.*
10″. (vii) + 314 pp. + folding map. Lond. 1939. 10s. 6d. R.
With P.E.P. Planning, *journal,* 7 Mar. 1939, *inserted.*

719
MINISTRY OF HEALTH : TOWN AND COUNTRY PLANNING ADVISORY COMMITTEE
*Report on the preservation of the countryside.
pam. 9¾″. Lond. 1938. 6d. R. *To Loan Library.*

Review of Periodicals

Attempt is made in this review to refer to the more important articles in all the journals received by the Library. None of the journals mentioned are in the Loan Library, but the Librarian will be pleased to give information about price and where each journal can be obtained. Members can have photostat copies of particular articles made at their own cost on application to the Librarian.

SCHOOLS

ARCHITECTS' JOURNAL. *1939. 23 March. P. 501.*
Shrewsbury Technical College, by A. G. Chant [*A.*].

LABORATORIES

ARCHITECTURAL FORUM (NEW YORK). *1939. March. P. 170.*
Laboratory and office building for the B.B. Chemical Company, Cambridge, Mass., by Coolidge Shepley Bulfinch & Abbott.

MUSEUMS AND EXHIBITIONS

L'ARCHITECTURE (PARIS). *1939. March. P. 95.*
The Museum and Art Gallery at Basle, by R. Christ and P. Bonatz.

SCHWEIZERISCHE BAUZEITUNG (ZURICH). *1939. 11 March.*
Number on the 1939 Zurich Exhibition. A large number of plans and photographs of buildings nearing completion.

LIBRARIES

ARKITEKTEN (COPENHAGEN). *1939. No. 2. P. 17.*
The National Library, Berne ; good plans and photographs.

ARKITEKTEN (COPENHAGEN). *1939. No. 2. P. 29.*
Proposed public lending library at Copenhagen, by S. Tegninger.

RADIO

ARCHITECTURAL DESIGN AND CONSTRUCTION. *1939. March. P. 92.*
The Dutch Broadcasting Station, Hilversum, by Merkelbach and Karsten.

ARCHITECTURAL FORUM (NEW YORK). *1939. March. P. 162.*
N.B.C. Broadcasting Studios, Hollywood, by O. B. Hanson. Interesting details for sound insulation and acoustic treatment.

INDUSTRIAL

ARCHITECT AND BUILDING NEWS. *1939. 24 March. P. 365.*
Factory extension for Messrs. Johnson & Phillips at Charlton, by Sir John Brown and A. E. Henson [*FF.*]. The factory is used for assembling electric switchgear.

BAUWELT (BERLIN). *1939. 9 March. P. 1.*
Factory for making uniforms at Hofheim, by M. Simon.

WELFARE AND COMMUNITY BUILDINGS

THE BUILDER. *1939. 17 March. P. 528.*
The Clough Hall Recreation Scheme, North Staffordshire, for the Miners' Welfare Committee, by J. H. Forshaw and W. A. Woodland [*FF.*]. It accommodates changing rooms and showers for cricket, club-room and kitchen, and a band-stand.

THE BUILDER. *1939. 17 March. PP. 527, 529.*
Hafod Pithead Baths, North Wales, and John Pithead Baths, Lancashire, both for the Miners' Welfare Committee, by J H. Forshaw and J. H. Bourne [*F./A.*].

HOSPITALS, ETC.

ARCHITECT AND BUILDING NEWS. *1939. 17 March. P. 336.*
The Masaryk Sanatorium, Czecho-Slovakia, by Libra & Kan ; accommodating 500 patients ; 400 with pulmonary and 100 with bone tuberculosis.

ARCHITECTURAL FORUM (NEW YORK). *1939. March. P. 173.*
Section on tuberculosis sanatoria, illustrating several sanatoria in the U.S.A. Useful key plans.

SPORTS BUILDINGS

TÉR ÉS FORMA (BUDAPEST). *1939. No. 1. P. 13.*
Open-air swimming bath at Kassa, by L. Oehlschläger.

THEATRES, CINEMAS

ARCHITECTURAL DESIGN AND CONSTRUCTION. *1939. March. P. 99.*
Section on Cinemas and Theatres, illustrating recent English examples. Notes on planning, equipment, engineering, air conditioning, furnishings and fittings.

ANNALES DE L'INSTITUT TECHNIQUE (PARIS). *1939. January-February. P. 51.*
Paper on cinema architecture, illustrated with plan and sectional diagrams, by M. de Montaut.

АРХИТЕКТУРА (MOSCOW). *1939. No. 3. P. 63.*
The reconstructed Stanislavsky Theatre at Moscow, by A. N. Fedorov.

RELIGIOUS

ARCHITECT AND BUILDING NEWS. *1939. 17 March. P. 325.*
Crematorium at Mortlake, by F. Douglas Barton.

HOUSES

ARCHITECT AND BUILDING NEWS. *1939. 17 March. P. 330.*
Town House in Paddington, by Denys Lasdun [*A.*].

ARCHITECTURAL DESIGN AND CONSTRUCTION. *1939. March. P. 88.*
Large private house at Jerusalem, by Erich Mendelsohn [*F.*].

WOOD. *1939. March. P. 138.*
Mass-produced Swedish timber houses, an article by A. E. Proskauer, illustrated with photographs and drawings.

L'ARCHITECTURE D'AUJOURD'HUI (PARIS). *1939. February.*
Number on private houses, flats, and prefabricated houses from all countries. Amongst the French work not previously illustrated is a house at La Celle-Saint-Cloud by F. Heep and J. Ginsberg, with stone walls and a reinforced concrete barrel roof.

Probably the most interesting thing in the issue is a portable steel holiday hut by Beaudouin and Lods, which measures about 10 ft. by 10 ft. on plan, can be erected in four or five hours, dismantled in two hours, and weighs under 1½ tons including all equipment. The accommodation comprises a room with two beds, and two recesses forming a kitchen and shower.

FLATS

ARCHITECTS' JOURNAL. *1939. 23 March. P. 483.*
" Fiona House," Bloomsbury, by Marshall & Tweedy [*FF.*] ; a hostel with bed-sitting rooms for 70 women and woman students of all nationalities.

Correspondence

HOUSING IN PADDINGTON

30 Blomfield Road,
Paddington, W.9

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—I think there is no substantial difference of opinion between Mr. Manning and the group of Paddington residents who issued the Memorandum on the Clarendon Street housing scheme and, indeed, that we are really allies. The Memorandum did not argue that the "only alternative to the engineer is the private architect." Mr. Manning has misinterpreted the Memorandum by assuming that we were putting weight either on the side of the private architect or on the side of the official architect. We are concerned solely with two things :

(i) that architects should not be subordinate to engineers in their official employment.

(ii) that an expert with specialist experience of working-class housing—whether an official architect or one in private practice—should be selected from the best names the country can offer for this particular scheme.

We are determined on the best and nothing less than that. We would like to see the assitant architects who are at present in subordinate positions in Paddington given every chance to apply in competition with others for this important position. It may well be that history will repeat the Coventry result and that a young man will be chosen.

Yours faithfully,
BARBARA BLISS

32 Rannoch Road,
Hammersmith,
London, W.6
15.3.39

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—I have read with interest Mr. R. D. Manning's letter on the above, appearing in the JOURNAL of 6 March, and entirely agree with his views.

One feels that public opinion in these cases is based, perhaps, on a misinterpretation of the designation "architectural assistant," and when it is generally known that the qualifications and experience of these "assistants" are equal, in most cases, to those of practising architects, there should be no doubt as to their capabilities. In this connection, "architectural assistants" would welcome recognition of their status by the Institute.

My own recent experience has shown me that practising architects themselves are quite ready to recognise the capabilities of "architectural assistants" in official employment, as when, for instance, against public opinion, a scheme for the slum clearance and redevelopment of a well-known Cornish fishing village was prepared by the local authorities architectural staff, and received the approval of a panel of local architects and members of the Council for the Preservation of Rural England, and the Government department concerned.

Yours faithfully,
L. BAKER [*L.*]

10 Gray's Inn Square,
London, W.C.1
24.3.39

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—The old "private *v.* official practice" controversy seems to be raising its head again in relation to the Paddington Housing Scheme and the issue tends to be fogged, as most issues are, by the factor of *amour-propre*. The position at Paddington is that a scheme of exceptional importance is being carried out, nominally, by an official whose functions are not primarily those of an architect at all. He may be fortunate enough to have some brilliant young architects on his staff; but in general I think it must be admitted that such men do not usually take kindly to the sort of position where initiative is cramped, merit unrecognised and capacity poorly rewarded.

It is possible that Paddington may get a finely conceived and well worked out scheme worthy of the exceptional opportunity presented; but if so it will be lucky—luckier than it deserves to be.

Yours faithfully,
F. L. JACKMAN [*F.*]

ASPHALTE AND MUSTARD GAS

The Natural Asphalte Mine-Owners and Manufacturers Council
16.2.39

To the Editor, JOURNAL R.I.B.A.

SIR,—As there appears to be some misunderstanding in regard to the use of asphalte in relation to its resistance to mustard gas, due to statements which have appeared in certain publications, the Council would like to summarise the position as to the suitability of asphalte in connection with structures where air-raid precautions are being considered, and also the use of the material for general purposes.

It has now been officially stated by the Home Office that :—

1. *Except in special buildings where anti-gas measures are conducted*, the various grades of asphalte normally employed in everyday work may still be used in buildings where air raid precautions are being considered.

2. In situations, and in particular floors, where in the event of war frequent decontamination from mustard gas might be necessary, a specially prepared asphaltic mix is recommended.
This grade of asphalte, which has been approved by the Air Raid Precautions Department of the Home Office for use under such conditions, is available from members of the Council.

It is interesting to note that asphalte used in general work is resistant to any known form of incendiary material likely to be used in warfare, and it is therefore unnecessary, excepting in certain specialised cases, to provide further protection to the roofs of buildings against fire.

The Council will be pleased to give any additional particulars with regard to this important matter upon application.

Yours faithfully,
G. J. HANCOCK,
Secretary

Obituaries

DETMAR BLOW [*F.*]

We regret to record the death on 7 February of Mr. Detmar Blow, at the age of 71.

Mr. Blow was one of the most able men representative of one phase of the contemporary Renaissance school. His work shows many contacts with the Cotswold school, particularly for the feeling evidenced in it for the use of materials and the adaption of building to site—two qualities that are perhaps an outstanding contribution of Edwardian practice. In his youth Mr. Blow had been a friend of John Ruskin, with whom he made a tour in Italy, and early in his architectural career, in 1892, he was winner of the R.I.B.A. Pugin Studentship.

Both in partnership with Mr. Fernand Billerey and alone he was responsible for a large amount of private work, mainly in the west end of London, and country houses. The following are the more important works executed: *Town houses:* 10 Carlton Terrace for Lord Ridley; 46 Grosvenor Street for Sir Edward Speyer; 9 Halkin Street for Mr. Hugh Morrison; 34 Queen Anne's Gate for Lord Glenconner. *Country houses:* Fonthill, Tisbury, for Mr. Hugh Morrison; Heale House, Salisbury, for the Hon. Louis Greville; Wilsford House, Salisbury, for Lord Glenconner; Lake House, Salisbury, for Mr. John Lovibond; Bramham Park, Yorks, for Lord Bingley; Horwood House, Bucks, for Mr. F. A. Denny; a house at Great Brickhill, Bucks, for Mr. Charles Whibley; and Charles Hill Court, Farnham, for Miss L. Antrobus. He also carried out *alterations* to Amesbury Abbey, Wilts; to Woodcock, Herts; and to the stables at Lavington Park, Petworth; to Breccles Hall, Norfolk; to Broome Park, Kent, for Lord Kitchener (a friend, for whom he also worked during the last war in France and elsewhere); to Eaton Hall Gardens; to Peatling Hall, Leicestershire; to Islay House, Islay; to Stoke Court, Stoke Poges; to Clare Priory, Suffolk; and to Old Buckenham Hall, Norfolk. Mr. Blow also carried out *work abroad*, including a house at Mimizan, Laudes, France, for the Duke of Westminster; a house at Garmisch, Bavaria, for the Hon. Mary Portman; and Government House at Salisbury, Livingstone and Bulawayo, South Africa, and a memorial to Cecil Rhodes. The following *church* work was also executed by him: Chapel at Ringwood, Hants, for Lord Manners; new reredos choir panelling, etc., in the chapel of King's College, Cambridge; Hewell Grange Chapel, Redditch, for the Earl of Plymouth; restoration of Clare Church, Suffolk. Mr. Blow also made the original design for the Kitchener Chapel in St. Paul's Cathedral. He was also the architect for the Playhouse, Northumberland Avenue.

MAJOR W. H. D. CAPLE [*Ret. F.*]

We regret to record the death on 19 January of Major William Henry Dashwood Caple. He was 73. Major Caple received his training at the Cardiff Technical College and in the office of Mr. E. M. Bruce Vaughan. From 1890 until August 1914 he practised in Cardiff, where he was for many years a prominent member of the Cardiff Corporation and chairman of the Buildings and Sites Committee and deputy chairman of the Public Works Committee.

He was commissioned in the Volunteer Force, R.E., in 1892 and served continuously in it and the Territorial Force until 1913, when he was placed on the Reserve until 1921. He commanded the Glamorgan Fortress R.E., T.A., and was awarded the Territorial Decoration for his distinguished services. In October 1914 he was commissioned in the regular Royal Engineers, with which he served until 1919, serving in Macedonia during 1916-17 and being several times mentioned in despatches.

After the war and until 1924 he was H.M. Commissioner for Housing for South Yorkshire and the Midlands.

From 1924 until 1936 he practised in Birmingham, where he was a prominent member of the Birmingham A.A. It was under his direction that the B.A.A. Green Book became so popular, and he was principally responsible for the establishment of a number of scholarships at the Birmingham School of Architecture and a fund for the cost of free public lectures on architecture.

Up to 1920 he was on the official list of Parliamentary candidates of the National Unionist Association; latterly he took considerable and active interest in the National Labour Party.

Among Major Caple's principal works are the Truant Schools at Dinas Powis and Quakers Yard; Glamorgan Riding School; Cardiff Barracks; hotels at Barry and Dinas Powis; bank premises for the National Provincial Bank at Canton, Cardiff and Barry; intermediate school, Barry; Park Street and Dumfries Place Drill Halls, Cardiff; restoration at Llangibby Church, Monmouthshire. During his practice in Birmingham he was principally engaged in church restoration work at Northfield, Kingsbury, Seckington, etc., all in the Birmingham Diocese. He was Diocesan Surveyor for the Archdeaconry of Monmouth and for the Birmingham Diocese.

H. T. D. HEDLEY [*F.*]

All architects in Sunderland and the Northern Counties deeply mourn the death on 7 January of Mr. Hugh Hedley. He was a man of outstanding character, and a pleasant comrade, and he leaves a large circle to mourn his loss, not only of his professional brothers but in a large circle of personal friends.

Mr. Hedley, who was born 1866, served his articles with the late G. A. Middleton, and for some years was in practice with Mr. Green, of Middleton & Green. He was afterwards in partnership with Mr. Clayton Greene, who retired from practice a little while ago.

For some years past Mr. Hedley practised as a private architect, his chief work lying in domestic architecture, and he has left some outstanding examples of his skill as a painstaking architect for domestic buildings, particularly in reconditioning houses at Northallerton, Grindon and in many instances at Sunderland. He had a large practice in estate work, being architect for the landowner, Mr. Thomas Turnbull of Fulwell. He was also architect to the Mowbray estate.

Mr. Hedley designed several large schools for the Education Authority at Sunderland and was busy at the time of his death with a school for the Roman Catholics at Fulwell.

He also designed the Public Library in Vilette Road, Sunderland, being successful in a competition for this work about the year 1910. Among his other works were business and commercial premises and factories.

T. R. Milburn [*F.*]

C. J. MORREAU [*A.*]

We regret to record the death on 1 March of Mr. C. J. Morreau, who was in partnership with Mr. Leslie Hiscock at Guildford.

Mr. C. J. Morreau took his degree at Cambridge and combined his architectural qualification with a double first in mathematics and in mechanical sciences. He joined the Institute as Associate in 1933 and subsequently became an Associate member of the Institution of Structural Engineers. On leaving Cambridge in 1928 he worked with Messrs. Thomas Worthington & Sons till 1933, when he joined the staff of the Building Research Station of the Department of Scientific and Industrial Research.

During all the time he was at the Station he worked in the section dealing with outside problems and the application of Building Research to practice. His combined architectural and mathematical training made him peculiarly well suited for this work and there will be many in industry, as well as his colleagues at the Station, who can recall his able handling of some difficult problems. He played a leading part in the work on sound transmission in buildings during his time at the Station and the investigations carried out at this period were particularly fruitful, for the guiding principles were clearly established for the first time and the practical application of the science began to emerge clearly. The success of this work was in no small measure due to Morreau's able handling of the architectural side of the problem. His paper to the R.I.B.A. on 6 December 1937 will probably be remembered by many and he was joint author, with Dr. Davis, of the National Physical Laboratory, of a Departmental Special Report on Sound Transmission in Buildings which will shortly be published and which is likely to stand for a long time as one of the milestones in building acoustics.

Morreau left the Station in 1937 to take up private practice ; his interest in the work was unabated, but he had the urge to build. He continued after he left to take an active interest in many phases of the Station's work and his loss is deeply felt by many of his colleagues who valued his friendship and had learned to look to him for sound advice on the practical applications of their work. Whilst at the Station he represented the Director, Dr. Stradling, on the R.I.B.A. Science Committee and later was elected to this Committee and served for a session as joint honorary secretary with Walter Goodesmith. He was nominated to the Science Committee for the present session and it will not be an easy task to find a successor for many of the tasks he had in hand.

He entered into partnership with Mr. Leslie Hiscock [*F.*] at Guildford, in 1937 and at once found himself very fully occupied with the cares of a growing practice.

He was personally one of the most delightful people to work with. He was very modest in his estimation of his own capabilities, but once he had taken a job or there was no doubt that it would be well done. He had a great fund of common sense and did great service at the Station in bringing problems out of the realms of the abstract to hard reality. He was very devoted to the welfare of architecture in general and of the Royal Institute in particular, and had strong views as to the lines on which some of the problems of the profession should be resolved. There can be no doubt that he had a brilliant future before him and his untimely death is a great loss to the profession, as well as to his many friends.

He leaves a widow and three children, to whom every sympathy is extended.

R. FITZMAURICE

Mr. Walter Goodesmith [*A.*], Hon. Secretary of the Science Committee, represented the R.I.B.A. at the funeral, which took place at Woking on 4 March.

T. BUTTERWORTH [*L.*]

A remarkable figure passed out of the architectural activities of Lancashire through the death on 6 January of Mr. Thomas Butterworth [*L.*], aged 82 years. He was the principal of the well-known firm of architects and surveyors, Messrs. J. H. Andrews and Butterworth, of 9 St. James's Square, Manchester.

Mr. Butterworth was a typical product of Rochdale, a man of strong character and vigorous mental activity, as revealed in his work on his plans almost to the very end.

A native of Littleborough, he served his articles in Rochdale, and became a principal of his firm when about 25 years old, and as the head had 50 years of full activity. Among his chief buildings are the following : Benger's Food factory, Holmes Chapel ; " Bee Bee " Biscuits Factory, Blackpool ; Whittle's Bakeries, Littleborough ; Messrs. R. Sharrock & Sons' Bakeries, Lincoln Grove and St. Leonard's Street, Manchester ; *News-Chronicle* printing works and Odham's printing works in Manchester ; and many warehouses and business premises in Manchester and elsewhere. He also built the Christian Science Church, Rochdale ; the Methodist Church, Dearnley, Rochdale ; and the Methodist Churches in Grasmere Road and at Layton, Blackpool. Among his first works in Manchester were the electricity station and schools for the Manchester Corporation.

A lifelong and active association with the Wesleyan Methodist cause which included the holding of practically every office open to a layman was begun at Dearnley, Rochdale, and continued at the North Shore Church, Blackpool. His church activities ranged from organist at Littleborough and Sunday School Superintendent, to Society Steward and Circuit Steward.

Mr. T. Butterworth had lived in Blackpool for 24 years, and was buried there on Tuesday, 10 January, in the Layton cemetery.

His only son, Mr. Harold Butterworth [*A.*], who for a long time had been in partnership with his father, will now be head of the firm.

T. EXLEY-FISHER [*L.*]

The death occurred on 23 January of Mr. T. Exley-Fisher, surveyor to Elland District Council. He was 59.

He was a native of Liversedge and served his articles under Mr. F. W. Ridgeway, of Messrs. Kirk, Son & Ridgeway, of Dewsbury. Before the War he held appointments as deputy surveyor at Ossett and estate agent for the late Sir Frederick Fison, Bart., whose estates were at Burley-in-Wharfedale. In the early part of the War he served with commissioned rank as a company commander and later was for three years engaged on technical work connected with the construction of roads and railways in France. At the close of the War he became resident engineer of sewage disposal and water schemes with the civil engineering firm of Messrs. John Taylor and Sons, Westminster, and it was in that capacity that he first went to Elland in 1924.

Later he was made housing architect in the Elland engineering department and in 1928 was appointed surveyor. He was responsible for the development of three housing areas.

Mr. Exley-Fisher was an Associate of the Surveyors' Institution, an Associate of the Institution of Municipal and County Engineers and a member of the Institution of Structural Engineers.

C. G. J. L. SCHUMANN [*L.*]

Mr. Carl Schumann, who died on 10 January, was born in 1895, and was trained at the Northern Polytechnic, Holloway. He worked for some time in Sir Herbert Baker's office on plans for New Delhi and the rebuilding of the Bank of England. For the past fourteen years he was in the L.C.C. Architects' Department, during which time he worked on schools and hospitals.

Notes

APPOINTMENTS VACANT

THE REGENT STREET POLYTECHNIC SCHOOL OF ARCHITECTURE AND TOWN PLANNING

Applications are invited for the undermentioned posts on the staff of the School. The selected candidates will be required to commence duties on 1 September.

1. Full-time Studio Master in Architecture and Lecturer on Architectural and Town Planning subjects.
2. Full-time Studio Master in Architecture and Lecturer on Constructional subjects.

Candidates must be Fellows or Associates of the R.I.B.A., and hold the degree or diploma of a recognised School of Architecture. Preference will be given to a candidate holding a Town Planning qualification in the former. Previous teaching experience will be a recommendation for both posts.

Salary in accordance with the Burnham Technical Scale for London, subject to the usual deduction for superannuation. The scale is £276—£15—£528. Up to seven increments may be given for a corresponding number of years of approved professional experience after the age of 21.

Forms of application, which must be returned not later than 4 May, can be obtained by sending a stamped, addressed foolscap envelope to the Director of Education, The Polytechnic, Regent Street, W.1.

THE ADMIRALTY

The Admiralty advertise a competition for the appointment of male assistant surveyors in the Civil Engineer-in-Chief's Department of the Admiralty and in the Directorate of Works of the Air Ministry.

Candidates must be over 22 and under 30. Candidates who have served or are serving in the Army, Navy or Air Force may deduct from their actual age any time not exceeding five years during which they have so served.

Persons holding situations in the Civil Service must obtain the permission of the authorities of their department to apply for appointment.

Candidates must be prepared to serve at home or abroad.

Applications should be addressed to the Civil Service Commission on a form to be obtained from that office. Candidates who appear to be qualified will be submitted to a written examination in the following subjects, and will be required to pay a fee of £3 10s. before the examination, in addition to the fee of 10s. payable on application :—

(1) Writing a report on some subject connected with the profession.
(2) Taking out quantities from drawings, abstracting and getting into bill, and measurement of works executed. Reading and interpreting drawings.
(3) Estimating and valuing, including analysis of prices.
(4) Specifications and contracts—
  (*a*) For works.
  (*b*) For supply of material, including use and properties of materials.
(5) Chain surveying and levelling.

Candidates who are Professional Associates of the Chartered Surveyors' Institution, having qualified under Sub-Division III (IA Quantities-Typical), or who have passed the examinations prescribed for such qualification, will be exempted from the written examination.

Candidates who pass the examination or are exempted will appear before a Selection Board, who will recommend for the vacancies existing those candidates who appear to them to possess the highest qualifications.

The scale of salary of Assistant Surveyors is £301 13s. per annum, rising by annual increments of £18 to a maximum of (£539 14s., with possible promotion to Surveyor), £539 14s. to £762, and Chief Surveyor, £953 13s. to £1,161 2s.

SIR MATTHEW OCHTERLONY, A.R.S.A.

Sir Matthew Ochterlony [*F.*] has been elected an Associate Member of the Royal Scottish Academy.

LONDON ORPHAN SCHOOL

The Architects' Benevolent Society is endeavouring to obtain admission to the London Orphan School for the elder son of an architect who died last December, leaving a widow and two young children totally unprovided for.

If any architects or others who are subscribers to the London Orphan School will be kind enough to promise their votes for this case, these will be most gratefully received by the widow or by the Architects' Benevolent Society, 66 Portland Place, London, W.1, who will gladly supply all information.

TOURS TO SWEDEN

EDUCATIONAL BUILDINGS IN SWEDEN

A Tour to Sweden, specially to study educational buildings and methods, will be conducted by Mr. Paul Abbatt from 17 to 29 May. Cost £18 12s., all included. Those interested should write to Mr. Paul Abbatt, 94 Wimpole Street, W.1.

DESIGN AND INDUSTRIES ASSOCIATION

24 June-7 July

The D.I.A. have arranged a visit to Sweden at the invitation of the Svenska Slöjdföreningen. On arrival at Gothenburg, visits will be made to the Town Hall, Concert House, Röhsska Art and Crafts Museum, Röstrand's Porcelain factory. The night will be spent at Jönköping, after which the Orrefors and Strömbergshy Han's glassworks will be visited. [29 June-4 July will be spent in Stockholm, when factories and buildings will be visited.

The cost is £21 5s., including first-class sea travel, third-class railway travel and hotel accommodation (bed and breakfast). Application should be made before 15 April to the Secretary, Design and Industries Association, 6 Queen Square, W.C.1.

R.I.B.A. GOLFING SOCIETY

Members are reminded that this season's first meeting takes place at St. George's Hill Golf Club on Wednesday, 19 April. The Hon. Secretary is H. St. John Harrison.

THE A.A.S.T.A. TOURS

The Association of Architects, Surveyors and Technical Assistants are running the following tours during the year :—

26 May to 30 May (Whitsun week-end), to Belgium. Brussels, Liege for the *International Exhibition of Water*, Ghent, Bruges, Ostend. Cost £3 12s.

2 September to 17 September : France. A Tour will be made either to Provence or the Yonne and Cote d'Or, whichever proves most acceptable. Cost £11.

19 August to 10 September : U.S.S.R. Leningrad, Moscow, Rostov, Kharkov. Cost £26 10s., all inclusive, no extras.

Those interested should write to the Secretary A.A.S.T.A., 113 High Holborn, W.C.1.

Notes from the Minutes of the Council

6 March 1939

The Royal Gold Medal.

The King's approval of the award of the Royal Gold Medal to Mr. Percy Thomas was formally reported.

Sir Edwin Lutyens, P.R.A.

Sir Edwin Lutyens has resumed his membership of the R.I.B.A.

Jubilee of the London County Council.

It has been decided to send a message of congratulation to the London County Council on the occasion of the Jubilee of the County Council.

Retirement of Mr. E. P. Wheeler [F.] as Architect of the London County Council.

Pending his retirement from the position of Architect of the London County Council, the Council have expressed to Mr. E. P. Wheeler their appreciation of his valuable services to the County Council for so many years, and particularly since he was appointed as Architect. They have also conveyed to him their thanks for the services which he has rendered to the Institute, and for the friendly and helpful spirit of co-operation which his Department has always shown towards the members of the profession.

The Council have also conveyed their congratulations to Mr. F. R. Hiorns [*F.*] on his appointment as Mr. Wheeler's successor, and have expressed their conviction that the pleasant relations between the Architect's Department and the profession generally will continue under his influence.

The British Coal Utilisation Research Association : Dr. P. O. Rosin's Film on the "Aerodynamics of the Domestic Open Fire."

The Council, on the recommendation of the Science Committee, have agreed that arrangements should be made to show Dr. P. O. Rosin's Film on the "Aerodynamics of the Domestic Open Fire" at the Institute.

Model Building Byelaws and the Minimum Height of Rooms.

On the recommendation of the Allied Societies' Conference and the Joint Sub-Committee of the Practice, Science and Town Planning Committees, the Ministry of Health have been informed that in the opinion of the Council it would be advantageous to reduce the minimum height of rooms from 8 feet to 7 feet 6 inches, and to urge that the Model Building Byelaws should be amended accordingly.

Appointments.

Jury for the Award of Medals by the Worshipful Company of Tylers and Bricklayers.

Mr. R. A. Duncan [*A.*] (Chairman of the Art Committee).

Hon. Secretary of the Social Committee.

Mr. Hubert Bennett [*A.*].

Membership.

The following members were elected :

As Fellows	.. ..	27
As Associates	.. ..	91
As Licentiates	.. ..	9

Election, 3 April 1939.

Applications for membership were approved as follows :

As Fellows	..	54 applications
As Associates	..	31 ,,
As Licentiates	..	16 ,,

Election, 19 June 1939.

Applications for membership from overseas candidates were approved as follows :

As Fellows	..	3 applications
As Associates	..	10 ,,

Application for Election as Licentiate under Section III (f) of the Supplemental Charter of 1925.

One application was approved.

Resignations.

The following resignations were accepted with regret :

Lennox Robertson [*F.*].
Howard John Wonnacott [*L.*].
Walter Harry Woods [*Retd. L.*].

Transfer to the Retired Members Class.

The following members were transferred to the Retired Members Class :

As Retired Fellows :	John Bevan.
	John Abram Moffat
As Retired Associate :	Charles Frederick Newcombe.
As Retired Licentiates :	Edward Forshaw.
	Frank Norman Denison Masters

ALLIED SOCIETIES' ACTIVITIES

Annual Dinners

We have had reports of several annual dinners.

The **Birmingham and Five Counties A.A.** held theirs on 11 March, when Mr. S. N. Cooke [*F.*] presided ; Mr. H. S. Goodhart-Rendel, President, spoke of the special services which architects could make in war time, and the necessity of having a profession well equipped to carry out the work for which they were "reserved," and of completing the register of architects. He pointed out that, now that architects were at last being recognised for the contribution they could make as planners, they should not lose sight of the value of scholarship and fancy, the first saving their time, and the second preventing them from being bores. Given peace, he looked forward to a new architectural renaissance in England, in which increased skill in planning would be the foundation. Alderman W. Byng Kenrick, Major-General Sir Fabian Ware, the Lord Mayor of Birmingham, Mr. S. J. Stainton, and Mr. H. J. Manzoni also spoke at what was a most successful annual dinner. The **Manchester Society** held their dinner on 27 February, when Mr. W. A. Johnson [*F.*] presided, and in the course of a witty speech referred with gratification to the passing of the Architects Registration Act, the happy relations which existed between the Institute and the Home Office and other Departments, and the compiling of a National Register of Architects. He also referred to the Institute's A.R.P. work, and pleaded for deep shelters in congested areas. He pointed out that the needs of defence had endorsed the teaching of the Institute on the growth of towns, the distribution of population, and the control of environment. The architect's job in the future would be service, not to private patrons, but to the community. Mr. H. S. Goodhart-Rendel spoke mainly on modern architecture. Many critics, he said, appeared to think that no good architecture was now produced, but he agreed with those who thought that the present standard was much the same as had existed since the Renaissance, but progress was not so apparent because of the difficulties of new technique, organisation, and materials with which

modern architects had to grapple. Architectural criticism nowadays was not the clear-cut affair it was before the last war, when it was comparatively easy to divide good architecture from bad, and sensible theorising from impudent dogmatism. The last twenty years had been levelling years ; the average was now high, but there were no outstanding achievements ; above all, skilful planning was now a very general possession. He went on to criticise, very shortly, the tendency to go outside the field of architecture into economics, sociology, etc., in eagerness to prepare ourselves for social reconstruction. He suggested that this wandering off into other fields was the result of boredom for " the mistress art was pulling a very long face over most of Europe." On the other hand, he agreed that the enlarged scope of architects' services made some of this external work necessary. Finally, he referred to A.R.P. and to the Registration Act. Mr. C. G. Agate [*F.*], in proposing the toast of " The City of Manchester," reviewed the architects' civic position in that city ; he believed that the burden of responsibility which they carried in their work on the Civic Advisory Committee was one which should rightly be borne by all sections of the community. The conception of civic dignity and status should have widely spread roots in the citizens themselves ; progress should not be directed from above by corporation or inspired leader. New problems of defence, he hoped, would bring with them a revaluation of human life, and with it better citizenship and town planning. The Lord Mayor of Manchester replied.

The annual dinner of the **West Yorkshire Society**, held in February, was attended by over three hundred people, including a number of distinguished local officials. Sir Bernard Lomas-Walker, past chairman of the West Riding County Council, in proposing the toast of " The R.I.B.A.," said that the employment of outside architects was no reflection upon the professional men employed permanently on the Council. It was a most absurd thing that local authorities should imagine that they could employ a man, sometimes for a somewhat meagre remuneration, and expect him to be an expert in everything. This was a day when all went to experts. He was happy to say that not only were they employing distinguished members of the architectural profession in London, but the West Riding County Council was employing architects to build schools in the county.

Mr. H. S. Goodhart-Rendel, who replied, said that the Institute was a society so large and so democratic that no one member could fancy himself to cut a very big figure in its institution or history. Two similar fields were cultivated by one undivided Institute—the professional and the learned ; and they should continue to be so cultivated. He went on to review the present-day diffident attitude to architecture, which was a reaction from Victorian cocksureness. But the great mass of building in any period had never been thought very much of by people at the time. Finally he referred to the Institute's attempts to raise the standard of public taste. Mr. J. S. Allen [*A.*], who presided in the absence through illness of the President of the Society, Mr. F. L. Charlton [*F.*], urged that civic improvements should not be lost sight of in preparations for defence. The Mayor of Huddersfield, Mr. Norval Paxton [*F.*], and Major James Milner, M.P., also spoke.

The **York and East Yorkshire Society** held their annual dinner early in March, when Mr. C. W. C. Needham [*F.*], in proposing the toast of " The R.I.B.A.," said that he looked forward to the day when it would be no more lawful for anyone but a qualified architect to put in plans to a local authority than it was for anyone but a lawyer to prepare a conveyance, but he was afraid that day seemed a long way off. But he was grateful to the Institute for its efforts in getting the Architects Registration Act passed. It was good to know that the Ministry of Health was at last recommending that trained architects should be employed for local authorities' housing. If this had been done earlier, the suburbs and countryside would have had a vastly different aspect to what they had to-day, and that without more expenditure.

In his speech, Mr. H. S. Goodhart-Rendel referred to York Minster, and hoped that it might always shine like a jewel in its own perfect setting of the old city. He referred again in this speech to the Institute's work in educating the public taste. People knew what they liked to live in, but in what they liked to look at they were apt to be dictated to by fashion and snobbery.

The Society's Vice-President, Mr. C. Leckenby [*F.*], in proposing the toast of " The City and County of York," congratulated the Corporation on recent improvements, but pleaded for the preservation of the Debtors' Prison and the employment of expert architectural advice in the repairing of the Assembly Rooms. The Lord Mayor of York, responding, said that it was the Corporation's intention to renovate the Rooms so that their character would be preserved.

The passing of the Registration Act was referred to with satisfaction at yet another annual dinner, in his speech at the **Newport (Eastern) Branch of the South Wales Institute** by its chairman, Mr. Colin L. Jones [*F.*], architect to the Monmouthshire County Council. Mr. Jones also congratulated the Institute on the creation of advisory panels, which he urged all local authorities to use. Mr. Ivor P. Jones [*A.*] and Mr. C. F. Ward [*F.*] also spoke. Alderman William George, Chairman of the Monmouthshire County Council, said that there would be an extensive educational programme in the county in which architects would play an important part.

Annual Meetings

We have had notice of several annual meetings. The **West Essex Chapter of the Essex, Cambridge and Herts Society** held theirs on 21 March, when a visit was made, after a dinner, to " The Sleeping Princess " ; 62 members and friends attended. The **Wilts and Dorset Society** held their annual meeting on 4 March : after the meeting, a supper was given by the Society, at which 23 members and guests were present. At its conclusion, a presentation was made to the late honorary secretary, Mr. W. W. Currie, who has held that position since the Society's formation in 1929. At the annual meeting of the **Western Branch of the South Wales Institute**, held in February, the following were elected : Chairman, Mr. F. A. Broad [*L.*] ; Hon. Secretary, Mr. J. Herbert Jones [*F.*] ; Hon. Treasurer, Mr. O. S. Portsmouth [*F.*] ; Hon. Auditor, Mr. Ernest E. Morgan [*F.*].

The **Central Branch of the South Wales Institute** held its annual meeting in March. Among the activities referred to in the annual report are the success of the lectures, exhibitions, etc., organised during the year ; a Structural A.R.P. Conference arranged in conjunction with the Home Office and the R.I.B.A. ; the School of Architecture Club, which was doing valuable work for the younger members ; and the success of various younger members in important architectural prize competitions. The following were elected officers for the year, beginning in July : Chairman, Mr. J. W. Bishop [*A.*], a former student of the Welsh School ; Hon. Treasurer, Mr. Harry Teather [*F.*] ; Hon. Secretary, Mr. W. S. Purchon [*F.*].

Meetings and Lectures

The **Royal Institute of the Architects of Ireland,** at their Council meeting in February, considered the proposed demolition of the Clock Tower on the Tholsel, Kilkenny. Having learned from the Town Council that its removal was absolutely essential on account of its unsafe condition, it was decided that measured drawings of it should be made, and the co-operation of the Institute was offered. At the same meeting Mr. Alan H. Hope was nominated for election to the seat on the Council made vacant by the death of Mr. T. J. Byrne ; at the meeting in March he was elected to this seat.

In February the **Nottingham, Derby and Lincoln Architectural Society** had a lecture from Mr. W. A. Allan on " Sound Transmission in Buildings," which aroused much interest and was well attended ; and last month they heard a lecture by Mr. Edwin Gunn [*A.*] on " Problems of a Rural Practice," which had an excellent audience.

The **South Wales Institute** have had a tea and discussion meeting, " That Architecture should be Controlled by the State," at which the debating was maintained at a high level, and a lecture by Mr. H. Ingham Ashworth [*F.*] on Flats—Their Design and Equipment ; and the Welsh School paid a visit to the R.W.A. School and played them at Rugger, when the Welsh School won by 17 points to nil. Afterwards the R.W.A. School held an exhibition of their work.

Students and Probationers

ELECTION OF STUDENTS R.I.B.A.

The following were elected as Students R.I.B.A. at the meeting of the Council held on 6 March 1939 :—

Barlow, Edward Ernest, *Harrow*. Beacher, Cecil Arthur Grenville, *Barnsley*. Broome, John Sommers, *London*. Buckley, John Cyril, *Liverpool*. Conner, James, *Inverurie*. Connor, George Stanley Wordsworth, *Leeds*. Crane, Arthur Tattersall, *Dundee*. Currell, Alexander John Macaskill, *Falkirk*. Dalgleish, William Affleck, *Inverness*. Fidell, (Miss) Margaret, *Monkseaton, Northumberland*. Gorst, Henry, *Preston*. Hood, William, *Tynemouth*. Jenkinson, John Mark Mansell, *Sheffield*. Kennedy, Kenneth, *Newcastle-upon-Tyne*. Lewis, Thomas William, *Cranford, Middlesex*. Lougher, Robert Morgan, *Cardiff*. McConnell, Raymond, *Sunderland*. Mackellar, Robert Norman, *Newcastle-upon-Tyne*. Manickam, Thambuswamy Joseph, *Liverpool*. Murray, Athol James, *London*. Nash, Philip Bertram, *Huddersfield*. Parnall, Alan Geach, *Bude*. Pemberton, Oliver John, *London*. Plant, James William, *Stoke-on-Trent*. Rush, Vincent John, *Manchester*. Smith, Hugh Standing, *Newcastle-upon-Tyne*. Stewart, William Ferguson, *Lanark*. Sykes, Fred Oliver, *Leeds*. Tait, Gordon Thomas, *London*. Terry, John Hankinson, *Goodwick, Pembrokeshire*. Tilley, Cedric Charles, *Bulawayo*. Titherley, Philip, *Liverpool*. Watson, Alexander, *West Cults, Aberdeenshire*. Whalley, James, *Leeds*. Whatley, (Miss) Joan, *London*.

R.I.B.A. PROBATIONERS

The following were enrolled as Probationers of the Royal Institute during the month of February 1939 :—

Ager, Denis Christopher, *Danbury, Essex*. Ayres, Leslie Harold, *London*. Beech, Gerald Rushworth, *Stoke-on-Trent*. Blake, Dennis Joseph, *Winchester*. Blockley, Leonard Hamilton, *Nottingham*. Bownas, Harold Charles, *Manchester*. Bray, Alan Kenneth, *Hull*. Brunton, Robert, *High Wycombe*. Buckingham, Bernard Oscar, *Bexleyheath*. Churchill, William Oliver, *London*. Coe, Stuart Paul, *Ashford, Kent*. Cooper, Cecil John, *Manchester*. Cowieson, John Ramsay, *Inverness*. Craig, Frederick Thompson, *Edinburgh*. Craven, Eric George, *Leeds*. Cunningham, Alexander, *Ayr*. Doig, William Inglis Norman Gordon, *Auchenblae, Kincardineshire*. Eadon, Derek Webster, *Sheffield*. Elphick, Peter George, *Newcastle-on-Tyne*. Every, Charles Henry Sherard, *London*. Freakley, Kenneth John, *Stone, Staffs*. Germaney, Robert William, *Sevenoaks*. Gowers, Colin Anthony Barrett, *Louth, Lincs*. Grant-Nelson, Alexander Walter Mackay, *Alton, Hants*. Green, Harold Edward, *York*. Griffiths, Margaret Joan, *Worcester Park*. Griffiths, Myrddin Rees, *Rhondda*. Haigh, Kenneth Bickerton, *Heckmondwike, Yorks*. Home, John Geoffrey Wyville, *Sevenoaks*. Hurworth, Peter Woodall, *Hull*. Hutt, Sidney, *Gateshead-on-Tyne*. Jervey, Richard Dennis, *London*. Keightley, Robert Wilfred, *York*. Kenshole, Edmund George, *London*. Latimer, Joan Isabel, *Newcastle-on-Tyne*. McCormick, John, *Glasgow*. MacRitchie, Alistair Crawford Cameron, *Glasgow*. McRobbie, John Austin, *Dumbarton*. Maddock, James Webster, *Yelverton*. Main, Thomas, *Airdrie*. Mainds, George Gordon Gilfillan, *Gosforth, Northumberland*. Mason, Charles Howard, *Rugeley, Staffs*. Mason, Thomas Louis Kaine, *Belfast*. Mathers, George Arthur James, *Totteridge*. Murray, Athol James, *London*. Owen, Stanley George, *Birmingham*. Potter, John Eric, *London*. Punter, Leslie, *Wolverhampton*. Rainbow, John Alyn Agar, *London*. Robinson, Douglas Varley, *Keighley*. Sayce, Patrick Campbell, *Dovercourt, Essex*. Seaman, Hugh Wynn, *Cardiff*. Seed, George Kenneth, *Preston*. Shatitsky, David, *London*. Stanford, Alec Alfred, *Hornsea, E. Yorks*. Taylor, William Dennis, *Long Eaton, Notts*. Thomson, Percival Stanley Bull, *Edinburgh*. Thomson, Ronald George, *Bonnybridge, Scotland*. Totterdell, Horace Ernest, *Bromley, Kent*. Wilson, Ronald John Aitken, *Dunoon, Argyllshire*. Windle, Peter Darnborough, *Bradford*.

Notices

THE TENTH GENERAL MEETING, MONDAY, 24 APRIL 1939, AT 8 P.M.

The Tenth General Meeting of the Session 1938-1939 will be held on Monday, 24 April 1939, at 8 p.m. for the following purposes :

To read the minutes of the Ninth General Meeting held on 3 April 1939 ; formally to admit members attending for the first time since their election.

Professor A. E. Richardson, A.R.A., F.S.A. [*F.*], to read a paper on " Railway Stations."

Members hoping to take part in the discussion may obtain advance copies of the paper on application to the Secretary, R.I.B.A.

STORAGE OF CEMENT IN SPECIAL BINS

The Joint Committee of London Architects and Builders desire to call the attention of architects to the following note which was recently published in the Journal of the Chartered Surveyors' Institution :

The Quantity Surveyors' Committee desire to call attention to the recent decision by cement manufacturers to make an extra charge of 1s. 6d. per ton on all cement which is sold and, for the convenience of the buyer, stored and, if necessary, sealed in bins specially reserved for the purpose.

Special binning of cement is sometimes required in large reinforced contracts. This decision is therefore brought to the notice of chartered quantity surveyors so that, in cases where the binning of cement is required by the specification, an appropriate clause may be inserted in the preliminaries to bills of quantities to enable the contractor to include for the extra cost involved.

BRITISH ARCHITECTS CONFERENCE, DUBLIN, 21-24 JUNE 1939

The Annual Conference this year of the Royal Institute of British Architects and its Allied and Associated Societies will be held in conjunction with the Centenary Celebration of the Royal Institute of the Architects of Ireland and will take place at Dublin from 21 to 24 June 1939.

The Royal Institute of the Architects of Ireland have in hand the preparation of a most attractive programme and particulars will be issued in due course.

All members and students of the R.I.B.A., and all members and students of the Architectural Association and the Allied Societies, are cordially invited to attend the conference.

It is expected that there will be a large attendance of members from all parts of the United Kingdom and Eire

and they are urgently requested to arrange for their hotel accommodation at the earliest possible date so as to avoid the risk of disappointment.

The Executive Committee of the Conference have kindly furnished the following list of hotels with charges :—

	Room and Breakfast	Full Pension
	s. d.	s. d.
Gresham	11 6	22 6
Shelbourne	12 6	21 0
Hibernian	12 6	22 6
Salthill (Monkstown) ..	12 6	22 6
Jury's	10 6	18 6
County	8 0	13 6
Central	10 0	20 0
Standard	10 6	15 9
Grosvenor	8 6	13 6
Four Courts	8 6	15 0
Ivanhoe	9 0	13 0
Grand Hotel (Greystones, Wicklow Coast) ..	11 6	22 6

Greystones is 18 miles from Dublin. Train and bus services hourly. Return fares : Rail, third class 1s. 7d., first class 2s. 7d. Bus : 2s. 10d.

The Executive Committee of the Conference have obtained special terms for accommodation at the above hotels. Messrs. Thos. Cook & Son, Ltd., have made reservation for the Conference members. Early notification to them is advisable, mentioning the Architects' Conference.

ROYAL INCORPORATION OF ARCHITECTS IN SCOTLAND ANNUAL CONVENTION 1939

The Annual Convention of the Royal Incorporation of Architects in Scotland will be held within the area of the Edinburgh Architectural Association on Friday and Saturday, 2 and 3 June 1939, at Peebles.

ANNUAL SUBSCRIPTIONS

Members' subscriptions, Students' and Subscribers' contributions became due on 1 January 1939.

The amounts are as follows :—

Fellows	£5 5 0
Associates	£3 3 0
Licentiates	£3 3 0
Students	£1 1 0
Subscribers	£1 1 0

NOTE.—By a resolution of the Council dated 20 July 1931 the subscriptions of R.I.B.A. members in the transoceanic Dominions who are also members of Allied Societies in those Dominions are reduced to the following amounts as from 1 January 1932 :—

Fellows	£3 3 0
Associates	£2 2 0
Licentiates	£2 2 0

Members who are already registered under the Architects' Registration Act 1931 are reminded that the annual renewal fee of 10s. became due on 1 January 1939, and should be forwarded DIRECT to the *Registrar, The Architects' Registration Council*, 68 Portland Place, W.1.

COMPOSITION OF SUBSCRIPTIONS FOR LIFE MEMBERSHIP

Fellows, Associates and Licentiates of the Royal Institute may become Life Members by compounding their respective annual subscriptions on the following basis :—

For a Fellow by a payment of £73 10s. (70 guineas).

For an Associate or Licentiate by a payment of £44 2s. (42 guineas), with a further payment of £29 8s. (28 guineas) on being admitted as a Fellow.

In the case of members in the transoceanic Dominions who are members of Allied Societies in those Dominions, the following basis will operate :—

For a Fellow by a payment of £52 10s. (50 guineas).

For an Associate or Licentiate by a payment of £31 10s. (30 guineas), with a further payment of £21 (20 guineas) on being admitted as a Fellow.

Provided always that in the case of a Fellow or Associate the above compositions are to be reduced by £1 1s. per annum for every completed year of membership of the Royal Institute after the first five years, and in the case of a Licentiate by £1 1s. per annum for every completed year of membership of the Royal Institute, with a minimum composition of £6 6s. in the case of Fellows and £4 4s. in the case of Associates and Licentiates.

CLASSES OF RETIRED MEMBERS

Under the provisions of Byelaw No. 15 applications may be received from those members who are eligible for transfer to the class of "Retired Fellows," "Retired Associates," or "Retired Licentiates."

The Byelaw is as follows :—

"Any Fellow, Associate or Licentiate who has reached the age of fifty-five and has retired from practice may, subject to the approval of the Council, be transferred without election to the class of 'Retired Fellows,' 'Retired Associates' or 'Retired Licentiates,' as the case may be, but in such case his interest in, or claim against the property of, the Royal Institute shall cease. The amount of the annual subscription payable by such 'Retired Fellow,' 'Retired Associate' or 'Retired Licentiate' shall be £1 1s. 0d., or such amount as may be determined by resolution of the Council, excepting in the case of those who have paid subscriptions as full members for thirty years, and who shall be exempt from further payment. A 'Retired Fellow,' 'Retired Associate' or 'Retired Licentiate' shall have the right to use the affix of his class with the word 'Retired' after it, shall be entitled to receive the JOURNAL and *Kalendar*, shall be entitled to the use of the Library, and shall have the right to attend General Meetings, but shall not be entitled to vote. A 'Retired Fellow,' 'Retired Associate' or 'Retired Licentiate' shall not engage in any avocation which in the opinion of the Council is inconsistent with that of architecture. Nothing contained in this Byelaw shall affect the rights of persons who at the date of the passing of this Byelaw are members of the classes of 'Retired Fellows' and 'Retired Members of the Society of Architects.'"

ARCHITECTURAL COMPETITIONS ASSESSORS' AWARDS

All architects who take part in architectural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that

the award of the assessor is final and binding upon themselves as well as upon the promoters, and that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

Further, all architects, whether competitors or otherwise, are reminded that discussion or correspondence in the public or professional Press which tends to criticism or disparagement of an assessor or award cannot alter the final and binding effect of the award, but may prejudice architects and the whole competition system in the opinion of the public, and is, therefore, highly undesirable.

THE R.I.B.A. REGISTER OF ASSISTANTS SEEKING ENGAGEMENTS

Members and Students of the R.I.B.A. and the Allied and Associated Societies are reminded that a Register of Assistants seeking engagements is kept at the offices of the Royal Institute.

An assistant seeking employment should obtain from the Secretary R.I.B.A. the necessary form (to be filled up in duplicate) on which particulars must be given as to the applicant's age, qualifications, salary required, references, etc.

The application will hold good for one month from the date of receipt, after which it must be renewed on a fresh form unless the applicant has meanwhile obtained employment.

Architects, whether members of the R.I.B.A. or not, will be furnished on application with the names and addresses of persons desiring employment as assistants, improvers or clerks of works as the case may be. Architects applying for assistants should give the following particulars of their requirements: (1) whether temporary or permanent engagement; (2) junior or senior assistants; (3) particulars of duties and style of work; (4) salary offered.

THE USE OF TITLES BY MEMBERS OF THE ROYAL INSTITUTE

In view of the passing of the Architects Registration Act 1938, members whose names are on the Statutory Register are advised to make use simply of the title "Chartered Architect" after the R.I.B.A. affix. The description "Registered Architect" is no longer necessary.

Members who are qualified for registration and have not already done so are reminded of the importance of applying for such registration without delay. Full particulars will be sent on application to the Secretary R.I.B.A.

LICENTIATES AND THE FELLOWSHIP

By a resolution of the Council passed on 4 April 1938, on and after 1 January 1939 all candidates whose work is approved will be required to sit for the examination, which will be the design portion of the Special Final Examination, and no candidates will be exempted from the examination.

NOTE.—The above resolution will not affect Licentiates of over 60 years of age applying under Section IV, Clause 4 (c) (ii) of the Supplemental Charter of 1925.

ASSOCIATES AND THE FELLOWSHIP

Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the election to take place on 19 June 1939 they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 15 April 1939.

OVERSEAS APPOINTMENTS

When members are contemplating applying for appointments overseas they are recommended to communicate with the Secretary R.I.B.A., who will supply them with any available information respecting conditions of employment, cost of living, climatic conditions, etc.

Competitions

The Council and Competitions Committee wish to remind members and members of Allied Societies that it is their duty to refuse to take part in competitions unless the conditions are in conformity with the R.I.B.A. Regulations for the Conduct of Architectural Competitions and have been approved by the Institute.

While, in the case of small limited private competitions modifications of the R.I.B.A. Regulations may be approved it is the duty of members who are asked to take part in a limited competition to notify the Secretary of the R.I.B.A. immediately, submitting particulars of the competition. This requirement now forms part of the Code of Professiona Practice in which it is ruled that a formal invitation to two or more architects to prepare designs in competition for the same project is deemed a limited competition.

AUCKLAND, NEW ZEALAND: NEW CATHEDRAL

The General Trust Board of the Diocese of Auckland invite members of the New Zealand Institute of Architects resident in New Zealand or overseas to submit in competition designs for a new Cathedral.

Assessor: Sir Giles Gilbert Scott, R.A. [*F.*].

Premiums: £1,000, £400, £200 and £100.

Last day for submitting designs: 15 November 1939.

Last day for questions: 31 May 1939.

Conditions of the competition may be obtained on application to (*a*) The General Trust Board, P.O. Box 652, Auckland, New Zealand, or (*b*) The Secretary R.I.B.A., 66 Portland Place, London, W.1. Deposit £1 1s.

BLACKPOOL: FYLDE WATER BOARD NEW OFFICES

The Fylde Water Board invite architects practising in and having a professional address in the county of Lancashire to submit in competition designs for new Offices to be erected on a site in Park Road, Blackpool.

Assessor: Professor A. C. Dickie [*A.*].

Premiums: £300, £200 and £100.

Last day for submitting designs: 31 May 1939.

Last day for questions: 25 March 1939.

Conditions of the competition may be obtained on application to the Fylde Water Board, Sefton Street, Blackpool, Lancs. Deposit £1 1s.

CONSETT, CO. DURHAM : NEW COUNCIL OFFICES

The Consett Urban District Council invite Chartered and/or Registered Architects of British nationality to submit in competition designs for new Council Offices to be erected on a site in Market Square.

Assessor : Mr. R. Norman MacKellar [*F.*].
Premiums : £150, £100 and £75.
Last day for submitting designs : 15 June 1939.
Last day for questions : 4 March 1939.

EDINBURGH : NEW EXHIBITION HALL

The Lord Provost, Magistrates and Council of the City of Edinburgh invite architects in association with consulting engineers, both resident in Great Britain, to submit in competition designs for an Exhibition Hall, to be erected on the site of the present Waverley Market, Princes Street, Edinburgh.

Assessor : Mr. Thomas S. Tait [*F.*].
Premiums : 500 guineas, 300 guineas and 200 guineas.
Last day for submitting designs : 31 August 1939.
Last day for questions : 15 February 1939.

EDINBURGH : NEW PRIMARY SCHOOL

The Lord Provost, Magistrates and Council of the City of Edinburgh invite architects resident or practising in Edinburgh to submit in competition designs for a new Primary School to be erected on a site at Tanfield.

Assessor : Mr. J. D. Cairns [*F.*].
Premiums : 100 guineas and 50 guineas.
Last day for submitting designs : 23 May 1939.
Last day for questions : 18 March 1939.

Conditions of the competition may be obtained on application to the Town Clerk, City Chambers, Edinburgh, 1. Deposit : £1 1s.

HUTTON, NEAR PRESTON, LANCS : NEW POLICE HEADQUARTERS

The Lancashire Standing Joint Committee for Police and other purposes invite Chartered and/or Registered architects to submit in competition designs for a new General Police Headquarters and Training School to be erected at Hutton, near Preston.

Assessor : Sir Percy Worthington, Litt.D., F.S.A. [*F.*].
Premiums : £500, £400 and £300.
Last day for submitting designs : 1 May 1939.
Last day for questions : 28 January 1939.

LAGOS, NIGERIA : NEW SUPREME COURT HOUSE

The Government of Nigeria invite architects of British nationality and resident in Great Britain and Africa who are members of the R.I.B.A. or of its Allied Societies to submit in competition designs for new Supreme Courts in Lagos, Nigeria.

Assessor : Mr. A. F. B. Anderson [*F.*].
Premiums : £500, £300 and £200.
Last day for submitting designs : 30 June 1939.
Last day for questions : 14 February 1939.

MARGATE : NEW CIVIC CENTRE

The Corporation of the Borough of Margate invite architects of British nationality who are members of the R.I.B.A. or its Allied Societies to submit in competition designs for a new Civic Centre to be erected on a site overlooking Hartsdown Park, Margate.

Assessor : Mr. A. F. B. Anderson [*F.*].
Premiums : £500, £300 and £200.
Last day for submitting designs : 31 August 1939.
Last day for questions : 31 March, 1939.

Conditions of the competition may be obtained on application to the Town Clerk, 40 Grosvenor Place, Margate. Deposit £1 1s.

COMPETITION FOR DESIGN OF AIR RAID SHELTER

The Air Raid Protection Institute, at the suggestion of the Lord Privy Seal, invite architects, engineers and others interested to submit in open competition designs for a blast and splinter proof air raid shelter to hold some fifty persons.

Assessors : Mr. Frank Cox [*L.*]
Mr. C. F. de Steiger
Mr. C. W. Glover
Mr. A. H. Moberly [*F.*]
Mr. G. R. Falkiner Nuttall

Prize : £105.
Last day for submitting designs : 8 May 1939.
Last day for questions : 15 April 1939.

Conditions of the competition may be obtained on application to the Secretary, Air Raid Protection Institute, 2 Millbank House, Wood Street, London, S.W.1. Deposit, £1 1s.

COMPETITION FOR A DESIGN FOR A CAMP

The Building Centre is organising a competition for a Design for a Camp. A first prize of £200 is offered with a further sum of £100 to be awarded at the discretion of the Assessors.

The last day for submitting designs is 16 May 1939.

Particulars of the competition and site plan may be obtained on application to Mr. F. R. Yerbury, Building Centre, 158 New Bond Street, London, W.1. Price 2s. 6d.

FORTHCOMING COMPETITIONS

Other competitions which it is proposed to hold, and the conditions for which are not yet available, are as follows :—

BRIGHOUSE : NEW MUNICIPAL BUILDINGS
Assessor : Mr. James R. Adamson [*F.*].

EDMONTON : NEW TOWN HALL BUILDINGS
Assessor : Mr. E. Berry Webber [*A.*].

HARROW : NEW INFECTIOUS DISEASES HOSPITAL
Assessor : Mr. E. Stanley Hall [*F.*]

OLDHAM : ELECTRICITY OFFICES AND DEPARTMENTAL BUILDINGS
Assessor : Professor R. A. Cordingley [*F.*].

WREXHAM : NEW TOWN HALL
Assessor : Mr. Herbert J. Rowse [*F.*].

MEMBERS' COLUMN

Owing to limitation of space, notices in this column are restricted to changes of address, partnerships vacant or wanted, practices for sale or wanted, office accommodation, and appointments vacant. Members are reminded that a column in the Advertisement Section of the Journal is reserved for the advertisements of members seeking appointments in architects' offices. No charge is made for such insertions and the privilege is confined to members who are definitely unemployed.

PARTNER WANTED

FIRM of Architects with old-established general practice in London and S.E. counties has vacancy for a Junior Partner, age about 30. Or would consider amalgamation with another architect having nucleus practice. Reply Box 1039, c/o Secretary R.I.B.A.

PARTNERSHIP WANTED IN SOUTH AFRICA

F.R.I.B.A. (age 39) is desirous of obtaining a partnership in established firm in South Africa. Over ten years general practice in England. Capital available. References exchanged. Apply Box 2839, c/o Secretary R.I.B.A.

JUNIOR PARTNER REQUIRED

A YOUNG AND ENERGETIC PARTNER is required (preferably an Associate with all-round experience) in the office of a Fellow practising in Hampshire and bordering counties. Write stating age, education, experience, and capital available to Box 2039, c/o Secretary R.I.B.A.

ASSISTANTS WANTED

ARCHITECT requires energetic and capable Assistants on work of excellent character. Reply stating age, training, experience, and salary to Box 2139, c/o Secretary R.I.B.A.

OFFICE ACCOMMODATION TO LET

TO LET in West End, third floor Office, 15 ft. 6 ins. by 14 ft., excellent lighting and central heating, furnished or unfurnished by arrangement; moderate rent and occasional use of secretary if required.—Reply Box 1739, c/o Secretary R.I.B.A.

FELLOW with offices in W.C. District of London offers accommodation to another architect with small practice with facilities for correspondence, interviews, phone, etc., at moderate terms.—Apply Box 2939, c/o Secretary R.I.B.A.

CHANGE OF ADDRESS

MR. E. EMRYS EDMUNDS [*A.*] has moved to No. 4 Brunswick Place, St. Helen's Road, Swansea. Telephone number, as before, Swansea 5438.

Architects' and Surveyors' Approved Society

ARCHITECTS' ASSISTANTS' INSURANCE FOR THE NATIONAL HEALTH AND PENSIONS ACTS

Architects' Assistants are advised to apply for the prospectus of the Architects' and Surveyors' Approved Society, which may be obtained from the Secretary of the Society, 113 High Holborn, London, W.C.1.

The Society deals with questions of insurability for the National Health and Pensions Acts (for England) under which, in general, those employed at remuneration not exceeding £250 per annum are compulsorily insurable.

In addition to the usual sickness, disablement and maternity benefits, the Society makes grants towards the cost of dental or optical treatment (including provision of spectacles).

No membership fee is payable beyond the normal Health and Pensions Insurance contribution.

The R.I.B.A. has representatives on the Committee of Management, and insured Assistants joining the Society can rely on prompt and sympathetic settlement of claims.

Architects' Benevolent Society

66 PORTLAND PLACE, W.1

FOUNDED 1850

The object of the Society is to afford assistance to architects, architects' assistants, and their widows and children by means of grants and pensions.

Subscriptions and donations of any amount are urgently needed. An annual subscriber of £1 1s. is entitled to recommend annually two applicants for relief.

A.B.S. INSURANCE DEPARTMENT

THE ARCHITECTS' SPECIAL MOTOR CAR INSURANCE AT LLOYD'S

In conjunction with a firm of Lloyd's Insurance Brokers the Architects' Benevolent Society's Insurance Committee have devised a Special Motor Car Policy for Architects. This policy and the special advantages to be gained from it are available only to members of the Royal Institute of British Architects and its Allied and Associated Societies.

Special features include:

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(The rates shown do not apply to cars garaged in London and Glasgow and Lancashire manufacturing towns; rates for these areas will be quoted on application.)

All enquiries with regard to the Special Motor Car Policy for Architects should be sent to the Secretary, A.B.S. Insurance Department, 66 Portland Place, W.1.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expressions of the Institute.

Members sending remittances by postal order for subscriptions of Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A. and crossed.

Members wishing to contribute notices or correspondence must send them addressed to the Editor not later than the Tuesday prior to the date of publication.

Back numbers of the JOURNAL can be obtained at the price of 1s. 9d., including postage throughout the world. For orders of more than six copies discounts are given. Orders must be prepaid.

R.I.B.A. JOURNAL

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VOLUME 4

Supplement to THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS *April 3, 1939.*

BUILDING SCIENCE

QUESTIONS *and* ANSWERS

NOTES FROM THE INFORMATION BUREAU OF THE BUILDING RESEARCH STATION*

(4th Series, No. 9)

From time to time there have been included in these Notes discussions of selected topics not necessarily related to specific questions addressed to the Station, but rather a reflection of a body of inquiries submitted. There are a number of such topics which it is thought could usefully be discussed in that way, and it has therefore been decided that for a period of twelve months or so these Notes shall take the form essentially of such discussions. It is not intended, however, to adhere rigidly to this form, for any inquiries of special interest that may be received by the Station during the period will be dealt with as before.

DIRECTOR OF BUILDING RESEARCH

DECORATING NEW PLASTER AND CEMENT

The following note is a summary of available knowledge—the treatment is not exhaustive. It is presented in the hope that it may be found useful as a convenient résumé of existing information.

Questions about paint and its application have always been very numerous among the inquiries received at the Building Research Station. Evidently the subject is one involving many problems arising from the nature of the materials and their reaction one with another. As regards the technique of painting different types of building materials, each brings its own special problems; for example, wood requires different treatment from metal, and metal from plaster and cement. The two last-named materials have been under investigation at the Building Research Station for a number of years not only as regards the properties and use of the materials themselves but also their effect upon decorative coatings applied to them.

COLLABORATION WITH THE PAINT RESEARCH STATION

In matters concerning paint the Station has the benefit of close contact with the Paint Research Station, and in recent years the two organisations have collaborated in the policy of publishing practical information about the use of paint. As an instance, the Building Research Station has just contributed a bulletin† to a series which is being produced by the Paint Research Station. This bulletin first discusses the various factors which are liable to affect the decorations on new plastered surfaces and shows the causes of the various difficulties experienced in this class of work in practice. It then goes on to discuss individually the different types of plastering materials, pointing out the special characteristics of each which may affect decoration, and indicating the appropriate precautions which should be taken to minimise the risk of trouble.

† "The Decoration of New Plaster and Cement," by H. M. Llewellyn and H. J. Eldridge (obtainable from the Paint Research Station, Teddington, price 1/- post free 1/2. Remittance should be sent with order).

EXAMPLES OF PAINT FAILURE ON PLASTER

To illustrate some of the difficulties encountered in practice, and to show the need which exists for a better understanding of plaster and paint and their effect upon one another, a few examples have been selected from the many problems which have been investigated.

1. *Discoloration and Blistering of Paint on Parian Cement*

Trouble was reported with the interior decorations of a large private house. The external walls were of brick, in cavity construction, and the internal partitions were in 9 in. solid brickwork. The interior surfaces were rendered with Portland cement and finished with a skimming coat of Parian cement.

* Crown Copyright Reserved

The plaster was primed with a "sharp" coat of white lead, gold size and turpentine immediately following the trowel and the remaining coats (one transparent coat, three lead undercoats, scumble and glaze) were applied about two weeks later.

During the following year extensive dark discolorations appeared in several rooms; these stains were found to be due to fungus growth. Some of the rooms were redecorated, an attempt being made to "hold back" the stains by applying a coat of styptic knotting to the affected area, but the discoloration re-appeared and the paint also developed blisters.

At this stage, eighteen months after the building was completed, the Building Research Station was asked to inspect and advise. Four of the living rooms were affected and it was noticed that the defects occurred almost entirely on partition walls. The defects were of three kinds:—(*a*) black patches characteristic of mould growth, (*b*) wet blisters containing yellow liquid, (*c*) dry blisters containing hard granules. Even where no blistering had occurred the paint was showing very poor adhesion and could easily be stripped off and the plaster underneath was perceptibly damp.

All the defects were considered to be associated with the damp condition of the walls. Fungus growth, of course, is always indicative of dampness. The yellow liquid in (*b*) was actually a solution of soaps produced by attack of the oil in the paint by the combined action of alkalis and lime; the latter was presumably carried through the plaster finish from the Portland cement backing by the moisture of the brickwork and cement, for examination of the Parian plaster finish did not suggest that lime had been added. The hard granules in (*c*) consisted of salts which again had probably been carried through by moisture from the interior of the wall.

The defects were therefore of a complex nature and an exact account of the way in which each occurred would be too long to include here. From the practical point of view, however, what is important is that water was the medium of all the reactions concerned. The whole trouble therefore was primarily due to the fact that the large amounts of water originally present in the massive brick partitions had been sealed in by applying several coats of impervious paint to both sides of the walls very early in the life of the building. Where the moisture had had a means of escape, i.e., by way of the cavity in the case of the external walls, comparatively little trouble was experienced. It is worth noting that the plaster under the paint on the partitions was still quite damp after 18 months, although the house had always been well warmed and ventilated, showing how slow drying may be from paint-covered walls.

Here then was a case of a large and well built property where trouble had arisen solely through applying a particular style of decoration at too early a stage. Had the final decoration been delayed and a porous flat-oil paint or distemper been used in the first place the walls would have been able to dry and a year later the final decoration could have been successfully applied.

2. *Blistering of Paint on Keene's Cement*

In an office building nearly forty years old, one floor was converted into a suite of offices. Partitions were erected and plastered on both sides with Keene's cement. The plaster was primed and painted with oil paint about ten days later, and these decorations remained perfectly satisfactory for three years.

Recently the rooms were redecorated by applying two further coats of oil paint. Within a month blistering of the paint occurred in one room only. This room was again decorated, but once more blistering occurred within a month and this time gradually extended.

The surface of the plaster where the blistering took place was found to be powdery. Samples of the paint film and of the powdery plaster were submitted to the Station for examination. Tests showed that the powdery layer contained oil and this observation gave the key to a solution of the problem.

The presence of oil suggested that the primer originally used was not "sharp" but contained a fair proportion of oil. Numerous tests have established that if such a primer is applied to plasters of the Keene's type at an early stage in their life, the oil is liable to penetrate and interfere with the setting of the plaster, producing a weak surface layer which thus makes a poor foundation for the paint coating.

A powdery layer is also sometimes produced on this type of plaster if the surface dries too rapidly—a defect known as "dry-out" of the plaster. In the present case the plastering was done in summer weather and the work was left bare for ten days, so the conditions were such as could have given rise to "dry-out."

There were, therefore, two possible explanations of the powderiness of the plaster surface. Nevertheless, it happened that the state of the plaster was not so weak as to cause failure of the original decorations. The paint film, however, cannot have been adhering strongly to the surface, for the application of two further coats of paint at the time of redecoration was sufficient to break down the adhesion between the original coats and the

plaster, with the result that the whole coating blistered and peeled.

This is a good example of a case where, as often happens, the cause of a failure is attributed (not unnaturally) to the material latest applied, whereas the true cause often has to be sought in the procedure adopted at an earlier stage.

Although the trouble actually developed in only one room of the suite it seemed very probable that in the other rooms the paint was only just adhering and that further painting might start trouble there also. It is likely, that in fact the margin of safety is often very narrow and it can only be increased by a more intimate understanding of the requirements of each individual type of surface which has to be painted.

In the present case, for example, it was necessary to keep in mind factors which were liable to interfere with the setting and hardening of the Keene's cement; for that would have pointed to the desirability of using a "sharp" primer and of taking precautions to avoid rapid drying in the early stages.

As regards remedial measures, it would obviously be useless to suggest any attempt at repainting without first removing the paint and the weak powdery plaster layer beneath it. If the powderiness were found to extend to any appreciable depth, it would be necessary to plaster the surface afresh.

3. *Blistering of Plasterwork*

In the case just described the plaster surface, and eventually the paintwork, became defective by reason of the particular procedure and materials adopted in the first painting operations. The following is an example of a failure which would probably have occurred in the circumstances no matter what paint was used.

The trouble occurred in a large single-storey room which was built between two wings of an existing private house in such a way as to leave a covered court between the new room and the old front of the main building; there were thus two new walls, the front external wall which was built in 18-in. brickwork and the back partition in 14-in. brickwork. The two side walls were formed by extending the existing walls of the wings.

Before plastering, the old stucco was hacked off the side walls. The whole of the walls of the room were then plastered with a cement-lime-sand undercoat and finished with a skimming coat of a well-known proprietary wall plaster. In the covered court the new partition was similarly plastered except that the undercoat consisted of lime-sand mortar instead of cement and sand.

Shortly before the plastering was done there was a heavy thunderstorm during which parts of the walls became saturated with water, since the roofing and guttering had not at that time been completed. The plastering was done in hot, dry weather.

The plaster was primed, immediately after trowelling, with a thin wash of "sharp" primer. When, after three or four weeks, the time came to complete the decorations the plaster was found to be soft and blistering in one or two places; these were rubbed down and re-primed and the whole was then given two undercoats of oil paint. Soon afterwards blistering was again seen in several places on the lower parts of the walls. The paint here showed poor adhesion and the plaster beneath it was soft and powdery, whereas in the upper portion it was harder and firmer with the paint adhering more strongly.

The defective areas were stripped and repainted after an interval of a week, and the whole was finished with graining colour and varnished. Blistering, however, soon appeared again and became more extensive but at no time was any trouble experienced in the court.

Although the failure was reported to the Station as blistering of the paintwork it was apparent as soon as the work was inspected that it was really the plaster skimming coat which was swollen and soft and in consequence of this the paint coating necessarily became distorted and unsightly. The defects all occurred in places where the brickwork had become saturated with water during the storm, before it had been plastered.

The following is suggested as the explanation of the trouble:—

The plaster used for the skimming coat was one which, like the Keene's cement mentioned in Case 2 above, takes some time to complete its hardening process by combining with the required amount of water. When the skimming coat was applied, the weather was hot and dry and consequently the water was removed from the plaster before the hardening process was complete—in other words the plaster suffered a "dry-out." At the same time, the brickwork backing still contained a considerable quantity of water after the storm, especially of course, in the lower portions, but this water could not pass through to the plaster quickly enough to prevent "dry-out" because of the relatively impervious nature of the cement under-coating.

Later, however, when the loss of water by drying was stopped by the application of several coats of paint, moisture from the backing gradually made its way into the plaster and the chemical process of hardening started once more.

If the hardening process with certain types of

plaster is interrupted and resumed later, local swellings and other effects occur such as those seen in the present case and these can be reproduced in the laboratory. This "delayed expansion," as it is termed, thus takes place if water eventually finds its way into a plaster which is suffering from "dry-out." The expansion and buckling is gradual and may continue over several months, and it is evident that the type of paint which happens to have been used makes little difference to the result.

The absence of any defects on the wall in the court is explained by the fact that the plaster undercoat used here (coarse stuff instead of cement and sand) was more porous and the water was thus able to pass up to the plaster surface quickly enough to prevent "dry-out."

Although the plaster in question was one which is widely used, it very seldom suffers from troubles such as those described and there is little doubt that in the present case no difficulty would have been experienced but for the fact that the walls became soaked. If the danger introduced by this fact had been realised at the time, the proper course would have been to allow the brickwork to dry before plastering, and it would also have been advisable to guard against the plaster drying too rapidly during hot weather.

The chief object in describing these three cases has been to show briefly some of the ways in which troubles can arise in practice. The recently published bulletin discusses in detail these and other sources of difficulty, under the following headings:—

(*a*) The chemical action of plasters on paints.

(*b*) Loss of adhesion.

(*c*) Efflorescence.

(*d*) Defects in the plaster.

(*e*) The growth of moulds.

The bulletin describes the practical means of combating these various factors and shows, in the case of individual plastering materials which of the factors is most likely to be operative.

It is hoped that the bulletin will be of assistance not only to the decorator, but to all others concerning in producing a satisfactory job, for it will be apparent on reading the information given, that the best results can only be achieved by the fullest possible co-operation between all parties concerned.

The following notes have been published in the current series:

No. 1.—The Design of Timber Floors to Prevent Dry Rot
No. 2.—The Design of Concrete Floors to Reduce the Transmission of Sound
No. 3.—The Cure of Smoky Chimneys
No. 4.—External Rendered Finishes
No. 5.—The Thermal Insulation of Buildings, General Principles
No. 6.—Natural Stone Masonry, Part I—Its Decay, Preservation and Repair
No. 7.—Natural Stone Masonry, Part II—Its Decay, Preservation and Repair
No. 8.—Mortar for Brickwork.

Copies of past issues can be obtained from the Royal Institute of British Architects, price 6d. a copy—for orders of more than six copies special rates will be given.

Librarian—Editor R.I.B.A.

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